

**JANUARY**  
(JANUARY-FEBRUARY)  
**1944**

# CHEMICAL PREVIEW

**NEW**

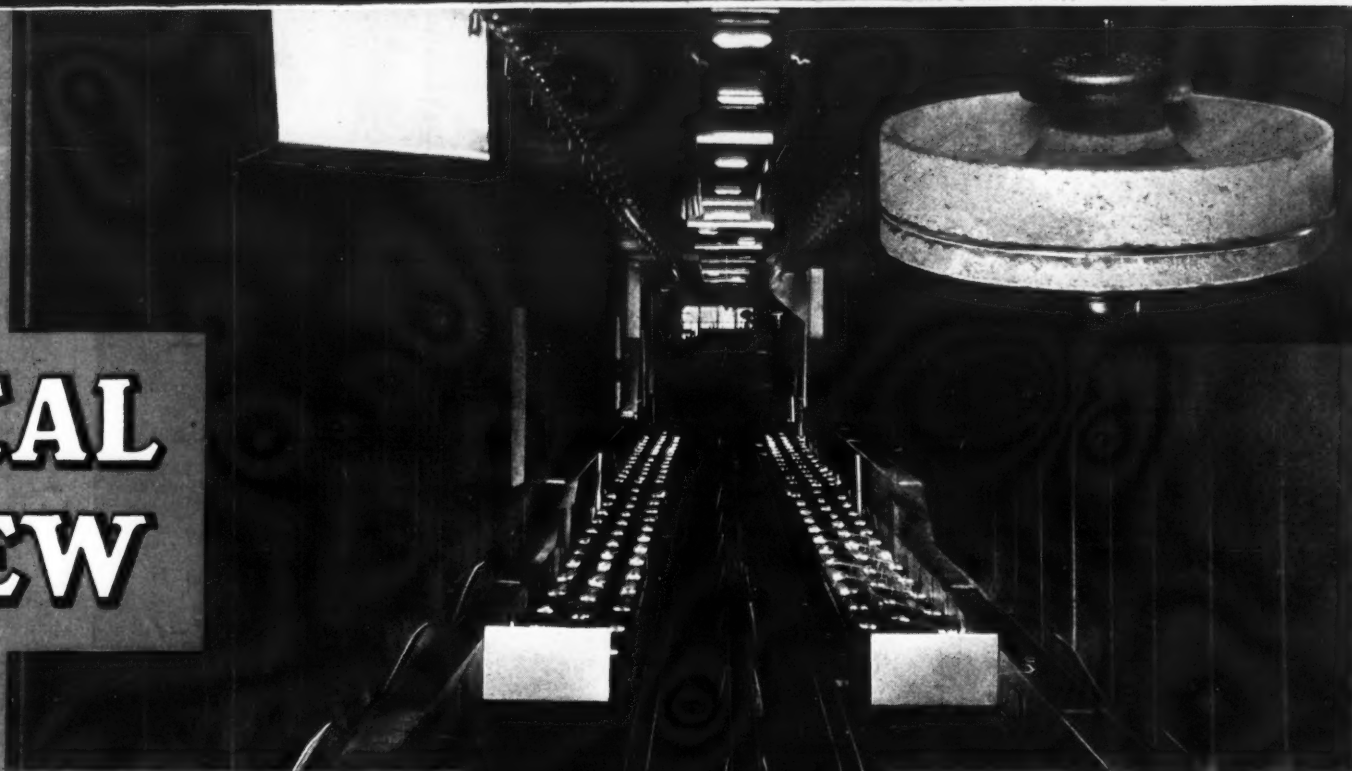
- ★ PROCESSES
- ★ MATERIALS
- ★ MACHINERY
- ★ PRODUCTS
- ★ APPLICATIONS



Latest developments in chemical  
process manufacturing...for engi-  
neers, chemists and executives.

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Conversion to "infra-red" gas burners (insert) cuts 100 ft. from length of paint drying oven — reduces curing cycle from 1½ hrs. to 6 min. For both metal and wood products at 150 to 550 F.

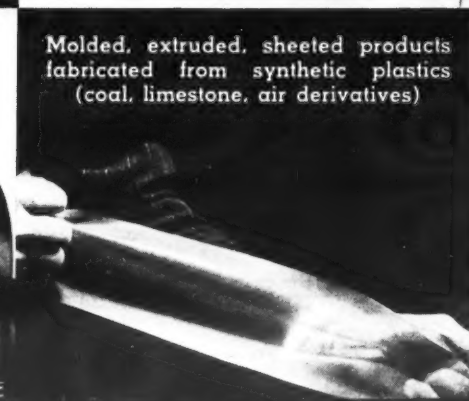
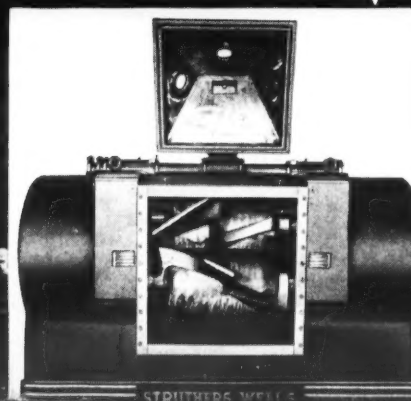
Continuous flow pressure type refractometer developed for indicating purity as product flows through pipe line in butadiene production. Now modified for application to various liquids

Synthetic rubber belting now in mass production provides services that compare favorably with natural product

Kneading machine processes products requiring accurately controlled treatment — features closer blade clearances



Molded, extruded, sheeted products fabricated from synthetic plastics (coal, limestone, air derivatives)



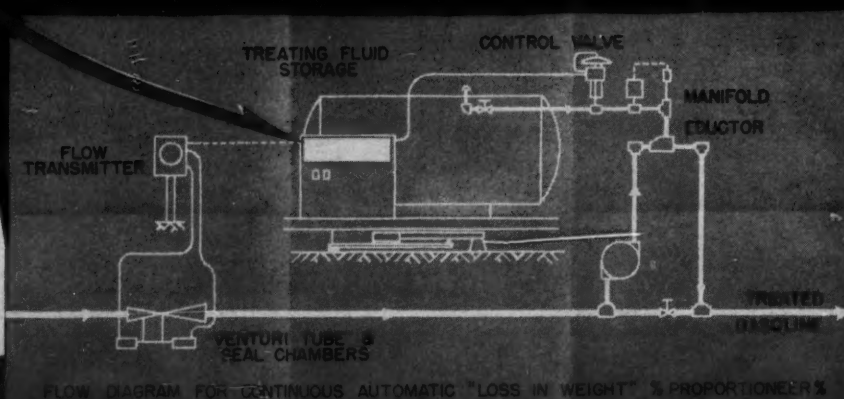
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## "That's Interesting"

### Morphine Substitute

A synthetic substitute for morphine in development for some time is now released for use. It is said to possess most of the advantages of morphine and but few of its disadvantages.

### Vitamin City Serves Free Drinks

Howey-in-the-Hills, (Florida) is said to be seriously considering changing its name to "Vitamin City." Consumption of orange juice by visitors with great benefit has prompted the idea. The town has long maintained a policy of serving free all the citrus fruits one cares to drink.

### Speaking of "Freezing"

Refrigeration anesthesia is a matter of increasing current interest. Ohmite News tells of its use in skin grafting operations in which chilling operations make the skin insensitive for periods of approximately 20 minutes, sufficient for the operation.

### A Skin Game

Two and one half million skunks are trapped or shot annually in the United States, while 9,000,000 muskrats and 3,500,000 possum add to the vast quantity of pelts required to meet the demand for furs.

### Cascara

Demand for dried cascara bark will reach a new peak this year. Destructive harvesting by inexperienced hands has prompted a campaign featuring the use of posters showing proper peeling procedure.

### Bossy Vs. Nanny

The greatly increased demand for milk and present supply problems lend interest to the fact that more humans drink goat's milk than any other kind. Also goat's milk is said to be superior to cow's milk for making fudge as attested by roadside signs in some eastern states offering — "Goat's Milk Fudge."

### The Eyes Have It

The human eye can detect some 10,000 tints of reds, blues, greens, browns, yellows. The spectrophotometer defines (?) 2,000,000 different shades.

### Welded Dresses

Dresses made without sewing are in prospect in view of recently patented method which makes rayon into dresses that might be termed spot welded garments.

### Roses Are Red . . etc.

Not so long ago it took twenty-five tons of violets to make a single ounce of natural oil, while a ton of roses yielded only ten ounces of oil. Now both of these are produced in the laboratory. Lilac could not be produced irrespective of labor or cost, until it was made by synthesis, for no satisfactory means was found of extracting the oil.

For more information on product at left, specify CP 8363  
... see information request  
blank between pages 2-3.



## Check Below, For More Product Information

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED BELOW . . . Check the items that interest you. Mail to publisher . . . information comes to you direct, without obligation.

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
8363	Proportioning Pumps	8423	Pump Governor	8482	High Speed Chemical Scales	8541	Power Shovels
8364	Conveyors	8424	Water De-ionizing Units	8483	Instant Water Heater	8542	Extinguisher Reference File
8365	Glass-lined Equipment	8425	Filters	8484	Portable Pyrometer	8543	Controllers
8366	AC Welder	8426	Laboratory Furniture	8485	Thermometer	8544	Packings
8367	Stainless Steel Castings	8427	Level Control	8486	Kneading Machine	8545	Synthetic Rubber V-Belts
8368	Conveyors	8428	Pumps	8487	Sectional Hairpin Exchangers	8546	Metallic Filter Cloth
8369	Distilled Water Resistance Recorder	8429	Glass Piping Valves	8488	Industrial Ovens	8547	Industrial Trucks
8370	Mixers	8430	Laboratory Equipment	8489	Expansion Joints	8548	Lighting Equipment
8371	Industrial Trucks	8431	Laboratory Furniture	8490	Vibrating Screens	8549	Rolls
8372	Corrosive Liquids Filter	8432	Temp. Control Switch	8491	Butterfly Valves	8550	Masonry Saw
8373	Infra-Red Burners	8433	Tank Gauge	8492	Metall Woven Belts	8551	Diaphragm Valves
8374	Air Conditioning	8434	Automatic Timing Controls	8493	Couplings & Fittings	8552	Condensate Return
8375	Step-Valve Pump	8435	Automatic Pipette	8494	Infra Red Equipment	8553	Rechargeable Storage Batteries
8376	Processing Equipment	8436	Electron Microscope	8495	Steam Traps	8554	Steam Traps
8377	Humidifiers	8437	Floor Patch	8496	Glass Insulation	8555	Water Baths & Sterilizers
8378	Barrel Truck	8438	Pressure Reducing Valves	8497	Heat Exchangers	8556	Carbon & Graphite Products
8379	Stainless Steel	8439	Acid, Alkali Proof Tanks	8498	Air Separator	8557	Roller Gravity Conveyor
8380	Electric Heat Units	8440	Plastic Insulation	8499	Data on Shipping Steel	8558	Scales
8381	Plastic Juicer Cups	8441	Synthetic Rubber Coating	8500	Lift Trucks	8559	Dust Suppressors
8382	Industrial Trucks	8442	Floor Patch	8501	Plant Equipment & Construction	8560	Heat Treating Furnace
8383	Photocopy Machine	8443	Protective Coating	8502	Resistors	8561	Centrifugals
8384	Plastics	8444	Wax Can Coating	8503	Butterfly Valves	8562	Maintenance Data Book
8385	After-Cooler	8445	Chemicals	8504	Humidifying Units	8563	Speed Controls
8386	Transformers	8446	Floor Masking	8505	Vibrating Conveyors	8564	Processing Equipment
8387	Chemical Industry Fabrics	8447	Temperature Controls	8506	Gas Storage Equipment	8565	Pipe Tools
8388	Spray Drying Equipment	8448	Carbon & Graphite Materials	8507	Grid Heater	8566	Corrosion-Resistant Alloys
8389	Adjustable-Speed Drive	8449	Pipe Joint Compound	8508	Filters	8567	Synthetic Belting
8390	Steam Generators	8450	Resins (Maleates)	8509	Pumps	8568	Grinding Fixtures
8391	Stove Dome Temp. Recorder	8451	Goggles Cleaning Fluid	8510	Impregnating Equipment	8569	Pumps
8392	Tool Furnace	8452	Capacitor Dielectric Material	8511	Data on Turbines	8570	Compressors for Making Explosives
8393	Water Fog Extinguisher	8453	Penicillin	8512	Speed Reducers	8571	Chemical Feeders
8394	Circuit Breaker	8454	Furfuryl Alcohols	8513	Water Still	8572	Corrosion-Resistant Metals
8395	Pressure & Vacuum Gauges	8455	Nitrocellulose	8514	Neoprene Gloves	8573	Lighting Equipment
8396	Refractometer	8456	Soldering Flux	8515	Steam Jacketed Kettles	8574	Belt Repair Material
8397	Snap-Action Switch	8457	Acid-proof Pipe	8516	Vacuum Coolers	8575	Vacuum Equipment
8398	Level Indicator	8458	Plastic Cork Coating	8517	Corrosion-Resistant Alloys	8576	Processing Equipment
8399	Signaling Timer	8459	Molding Powder	8518	Pumps	8577	Pumps
8400	Laboratory Furnaces	8460	Pine Oil	8519	Electrical Equipment	8578	Air Separator
8401	Solenoid Valves	8461	Extruded Rubber Tubing	8520	Handling Equipment	8579	Tube Mills
8402	Control Cabinets	8462	Basic Chemicals	8521	Steam, Gasoline, Air Traps	8580	Quench Tank Extinguishers
8403	Rotameter	8463	Chemical Porcelain	8522	Linked Diaphragm Pump	8581	Carton Stitches
8404	Laboratory Glassware	8464	Sulphur Strips	8523	Scales	8582	Spray Drying Equipment
8405	Abraser	8465	Gum Paper Remover	8524	Proportioning Equipment	8583	Pneumatic Conveyors
8406	Flowmeters	8466	Diphenylene Oxide	8525	Steel Flooring	8584	Mixers
8407	Combustion Tube Furnace	8467	Packaging Machinery	8526	Safety Equipment	8585	Dry Vacuum Pump
8408	Controllers	8468	De-Ironer	8527	Blowers	8586	Valves
8409	Level Gauges	8469	Glass Drilling Aid	8528	Pulverizing Units	8587	Inert Gas Generators
8410	Laboratory Equipment	8470	Plating Rack Tape	8529	Warm Gear Speed Reducers	8588	Trailers
8411	Indicating, Recording Thermometers	8471	Colloid Mills	8530	Industrial Soap	8589	Group Drives
8412	Calrod Fin Heaters	8472	Condensate Pump Level Control	8531	Anti-Freeze Compounds	8590	Precision Reproduction
8413	Welded Pressure Vessels	8473	Sprockets	8532	Communications Systems	8591	Automatic Filler Unit
8414	Feedwater Control	8474	Automatic Timers	8533	Belt Drives	8592	Hydraulic Valves
8415	Radiant Heating Oven	8475	Lift Trucks	8534	Temperature Test Unit	8593	Rotary Pumps
8416	Liquid Metering System	8476	Bag Closer	8535	Industrial Trucks	8594	Packings
8417	Laboratory Furniture	8477	Laboratory Furnace	8536	Valves	8595	Filters
8418	Condensate Pump Alternator	8478	Level Control	8537	Unit Sub-stations	8596	Diaphragm Latex Pump
8419	Velocity Meter	8479	Level Control Manometer	8538	Potentiometers	8597	Temperature Controls
8420	One Gal. Autoclave	8480	Fabricated Steel Equip.	8539	Thickeners	8598	Processing Equipment
8421	Pneumatic Controller	8481	Roller Chain Coupling	8540	Filter for Oils	8599	Cloth Tape
8422	Controls					8600	Eye & Face Shields

Mail to CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois

MORE PRODUCT INFORMATION  
Check products which interest you, mail to us.

If you wish

# If You Wish More Information On Products--

January-February, 1944

See Reverse Side of this Sheet — Be Sure To Give Your Address

(Listing of products continued)

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
8801	Pumps	8845	Dust Collectors	8882	Butterfly Valves	8739	Belt Idlers
8802	Industrial Trucks	8846	Pumps	8883	Heat Resistor	8740	Kelvin Bridge
8803	Couplings	8847	Centralized Lubrication	8884	Insulated Process Pipe Conduit	8741	Welding Book
8804	Vacuum Cleaning System	8848	Platform Trucks	8885	Tube Cleaner	8742	Plastic Piping
8805	Hoist	8849	Humidifiers	8886	Barrel Truck	8743	Pumps
8806	Packings & Seals	8850	Pipe Joint Seal	8887	Portable Conveyors	8744	Resinoid Wheels
8807	Industrial Propellers	8851	Scales	8888	Pumps	8745	Blower Type Diffusers
8808	Explosion-proof Wiring Units	8852	Steam-Jet Ejectors	8889	Fiber Pipe	8746	Wood Lockers
8809	Grid Heaters	8853	Industrial Wheels	8890	Spray Nozzles	8747	CO <sub>2</sub> Fire Extinguishers
8810	Processing Equipment	8854	Table Type Printers	8891	Pipeline Strainers	8748	Time Delay Relays
8811	Acid-Handling Pump	8855	Coil Winding Calculator	8892	Steam Traps	8749	Float Boxes
8812	Air Separator	8856	Spray Nozzles	8893	Drum Opener	8750	Conduit Systems
8813	Plastic Pipes, Tanks	8857	Steel Flooring	8894	Rubber Pouring Buckets	8751	Centrifugal Blowers
8814	Titanium Oxide in Paints	8858	Packaging Machinery	8895	Ball & Tube Mills	8752	Laboratory Oven
8815	Protective Hand Coating	8859	Sealers	8896	Filter Plates	8753	Disc Filters
8816	Piping Pointers Film	8860	Plastic Instrument Chart	8897	Processing Equipment	8754	Proportioning Pumps
8817	Tube Fittings	8861	Pressure Vessels	8898	Electronic & Radio Supplies	8755	Pressure Reducing Regulators
8818	Carboy Drainer	8862	Rotary Dryers	8899	Centrifugal Clutch	8756	Heat Resistant Stenware
8819	Potentiometers	8863	Handling Equipment	8900	Glass Tanks	8757	Propeller Agitators
8820	Handling Bucket	8864	Dust Collectors	8901	Flame Arrestors	8758	Gears
8821	Power Unit for Hand Cranes	8865	Assembled Trucks	8902	Pumps	8759	Colloid Mill
8822	Dust Collectors	8866	Horizontal Plate Filters	8903	Pipe Flow Detector	8760	Wire Rope Conservation
8823	Plasticizers	8867	Gloves, Aprons, Sleeves	8904	Tubing	8761	Test Instruments
8824	Pumps	8868	Tachometer	8905	Steam Trap	8762	Liquid Measuring Meters
8825	Centralized Lubrication	8869	pH Control	8906	Heavy Duty Power Unit	8763	Masonry Saw
8826	Bag Closer	8870	CO <sub>2</sub> Fog Extinguishers	8907	Hammer Crusher	8764	Steam Plant Equipment
8827	Rubberized Industrial Gloves	8871	Liquid Screens	8908	Dust Collector	8765	Agitators
8828	Dust Collectors	8872	Dust Collector	8909	Cutting Tools	8766	Pump Data Book
8829	Spectrum Light Bulbs	8873	Electro-float Separator	8910	Test Panels	8767	Metal Stampings
8830	Steam Traps	8874	Floor Trucks	8911	Dust Collectors	8768	Packaging Equipment
8831	Vertical Compressors	8875	Diamond Abrasive Wheels	8912	Pump Data	8769	Floatless Level Control
8832	Non-Allergen Qualities of Neoprene Gloves	8876	Dryers	8913	Lighting Equipment	8770	Label Paste
8833	Manometers	8877	Spraying System	8914	Mixer	8771	Sump Pump
8834	Pumps	8878	Latexes	8915	Silica Gel Adsorptive Dryers	8772	Lighting Equipment
8835	Stainless Steel	8879	Hydraulic Jacks	8916	Lubricated Plug-Valves	8773	Humidity Control
8836	Corrosion-Proof Coating	8880	Vibrating Screens	8917	Dry-Type Transformers	8774	Gas Analyzers
8837	Filter Presses	8881	Overhead Handling Equipment	8918	Protective Creams & Lotions	8775	pH Equipment
8838	Screw Conveyor	8882	Bag Closing Machine	8919	Coal Tar Solvents	8776	Dewatering Press
8839	Pneumatic Conveying Systems	8883	Diaphragm Valves	8920	Porous Mediums	8777	Magnetic Equipment
8840	Manel Floats	8884	Air Motors	8921	Band Filing Machine	8778	Floor Patch
8841	Pipe Tools	8885	Steel Strapping	8922	Absorbent Floor Compound	8779	Test Dryers
8842	Swivel Joints	8886	Sifters	8923	Sifters	8780	Dust Recovery
8843	Safety Equipment	8887	Goggle Cleaning Cabinet	8924	Filter Presses	4th	Cover Processing Tanks
8844	Wood Link Matting	8888	Flaring Tool for Plastic Pipe	8925	Porous Mediums		
		8889	Explosion Proof Cans	8926	Air Flotation Unit		
		8890	Fastenings	8927	CO <sub>2</sub> Extinguishers		
		8891	Vibrating Equipment	8928	Laboratory Furnace		

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Street Address .....

City and State ..... (Please Give Postal Zone Number)

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The Infra-Red gas burner (top) are radiant type maintained by the combustion of the radiating surface itself. The temperatures as high as 2300° F. in both high and low pressure are commercially available for hydro-carbon gas. See page 39.

The instrument (left center) taking readings at the pressure produced. Since butadiene boils at 19° C., refractometers either under pressure or the modified instrument, temperatures are maintained with individual requirements for liquids. See page 14.

The synthetic plastics from — gaskets, diaphragms etc. are made are known as "vinyl alcohol resin". The small conveyor belt — is described on page 39.

Synthetic rubber transmission (lower left) is helping to result from natural rubber fabric which forms the base of the company's textile plant. The synthetic rubber is forced through the use of rollers.

Handling heavy and viscous application in chemical machinery (bottom center). It is being and cooling and set up. See page 39.

## How To Use

If you are particularly interested in the Directory of All Products Here is an alphabetical listing of the featured editorially or in the advertisement. Then, to make sure you keep a copy of something you have heard of, browse through the rest of the Directory. The Editors have searched for the comprehensive Preview of product developments in chemical processing work. This is to keep posted with a minimum of effort. If it interests you particularly, or if you use the handy information, just check the item that interests you and send this slip to the Editors. And don't forget . . . when you send it to your associates as they'll be interested too.

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## Pictures

as burners used in the drying oven type burners. The temperature is combustion of an air gas mixture on ace itself. They operate at tempera- 300° F indefinitely. They are employed low pressure gas applications — burn available gas from manufactured to See page 6.

(left center) is a refinement of one for the pressure at which butadiene is butadiene under atmospheric pressure refractometric readings must be made ure or at decreased temperature. In ument, also, both pressure and tem- tained within the instrument to meet ements and application to various 4.

tics from which the various products gms etc., (right center & lower right) n as "Compars" (compounded poly- n). Typical application — use in — is described on page 10.

transmission and conveyor belting lping to alleviate the limited supply tural rubber shortage. The cotton is the base of the product is made in ile plants and then to factory where is forced into pores of the fabric ollers. See page 54.

nd viscous materials is the primary mical industries of the kneading m-er). It can also be arranged for heat- d set up to operate under a vacuum.



## How To Use This Issue

interested in a specific type of product, turn f All Products in This Issue on page 98-99. al listing of every product, whether it is in the advertising.

you keep abreast of latest developments, per- have heard nothing about, you'll want to st of the pages.

ched far and wide to bring you this com- product developments of help to you in your rk. Thus, they save your time, enable you minimum of effort. When you find an item ticularly, and you'd like more information formation request slip between pages 2 and n that interests you, fill in your name and lip to the publishers. The information will

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e of charge simply by sending your request ur company letterhead and telling them of ur chemical processing plant, if you are a executive. Your request subscription will There is no charge or obligation for this

# Questions we are often asked ABOUT GLASS-LINED STEEL

**Under what temperature conditions  
are glass-lined vessels used  
with complete satisfaction?**



"Highly Corrosive Acid Service in the petroleum and other industries has brought forth new performance and new Pfaudler Equipment designs," says George F. Kroha, vice-president and sales manager of the Pfaudler Company.



**ANSWER:** Glass-lined vessels are used with complete satisfaction in the handling of all mineral and inorganic acids, including HCl acid, wet chlorine, and other acids of the halogen group except hydrofluoric, under all concentrations and at temperatures up to 650°F., depending upon the size of the piece.

It is rather difficult to define exactly the limits of capacity and pressure, but the following is a guide:

Capacity	Temperature Degrees F.
Vessels up to 3,000 gals. handling HCl at 250-300	
Vessels up to 1,500 gals. handling HCl at 450-500	
Vessels up to 750 gals. handling HCl at 550-600	
Vessels up to 100 gals. handling HCl at 600-650	

In giving these figures, there is the qualification that

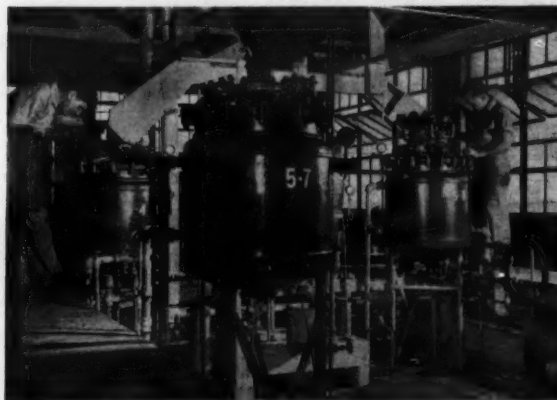
Six 750-gallon jacketed glass-lined steel reaction kettles are used in the production of vitamins in a large Eastern plant.



the design of the piece, the pressure conditions, and other possible factors may change the gallonage rating.

At the present time, the largest standardized Pfaudler reactor for HCl acid service is 2,000 gals. Any vessel for HCl at elevated temperatures above 2,000 gals. in capacity becomes a special case

It is well to note that in certain cases we have exceeded the above limits by very substantial margins.



Pfaudler Jacketed Reaction Kettles arranged in a full scale production version of the familiar laboratory "three neck flask equipped with funnel, reflux condenser and stirrer" Pfaudler Glass-Lined Steel equipment permits the transfer of laboratory research to pilot plant and full scale production without the danger of metallic contamination

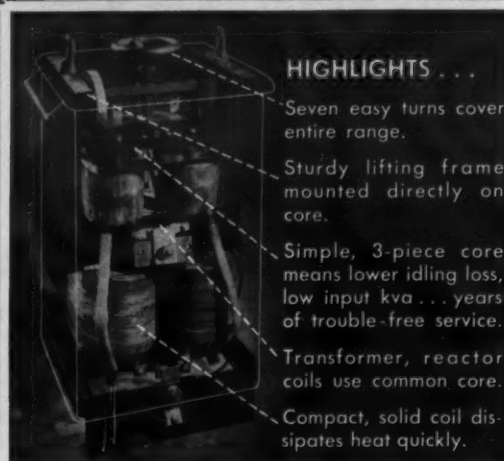
During the past several years our continuing policy of research has permitted us repeatedly to increase our size, temperatures and pressure limits. Just what our top limits will be we do not know, but we do know that we will continue our efforts to increase them as long as we obtain results.

We suggest that you send for our standard catalog of high pressure and low pressure reactors. The line has been standardized and reactors, chlorinators, sulphinators, nitrators, stills, condensers, receivers and evaporators are now available in a large variety of sizes and accessories.

**THE PFAUDLER COMPANY, ROCHESTER 4, NEW YORK**  
**ENGINEERED GLASS-LINED AND STAINLESS STEEL EQUIPMENT**

When inquiring specify CP8365 . . . see information request blank, pgs. 2-3

# PRODUCT OF THE MONTH



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Seven easy turns cover entire range.

Sturdy lifting frame mounted directly on core.

Simple, 3-piece core means lower idling loss, low input kva... years of trouble-free service.

Transformer, reactor coils use common core.

Compact, solid coil dissipates heat quickly.

**MILWAUKEE, WIS.**—Allis-Chalmers announces the new Ampac "400" a-c welder...engineered and built during the war to meet 24-hour-day requirements. It employs the simplest possible construction of a continuously variable welder—is exceptionally efficient and rugged. B-6302.

**ALLIS-CHALMERS·MILWAUKEE·WIS.**

A 1670

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## STAINLESS STEEL CASTINGS

Are you using stainless steel forgings or fabricated parts which might conceivably be cast—with consequent savings in cost, man-hours and delivery time? If so, the chances are we can help you.

Using either the static or centrifugal method—which ever is better for a particular job—we are able to produce many parts previously considered impossible to cast.

Write for complete information. Tell us what your problem is and give us a chance to help you solve it.

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# CHEMICAL PREVIEW

Edited for Production and Laboratory  
Men in the Chemical Process Industries

VOLUME 7

NUMBER 1

January-February, 1944

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## 25,000 Circulation in These Chemical Process Plants

Brewers, Distillers	Fertilizers	Petroleum Refining
Cellulose	Food Products	Plastics
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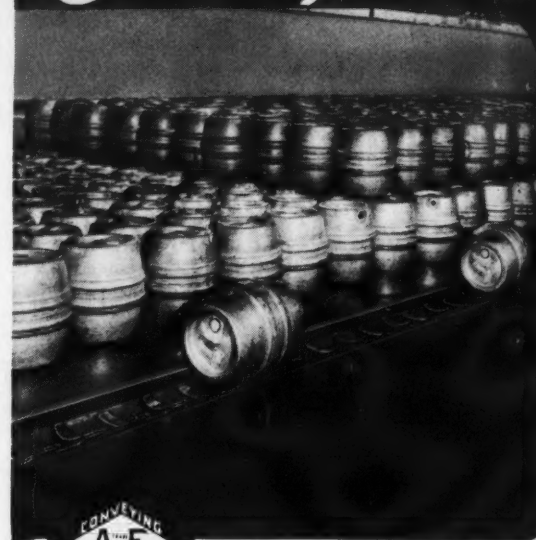
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THIS Alvey-Ferguson barrel chain conveyor installation is another example of more efficient product handling by means of endless-stream A-F Scientifically Planned Conveyors. If you have an "indoor transportation" problem write today and our engineers will help you solve it. Or write for new folder showing all types of A-F Conveyors in war plants.

**THE ALVEY-FERGUSON CO., 12 Disney St., Cincinnati 9, O.**

When inquiring specify CP8368—see information request blank, pgs. 2-3



Supervisor in a Sharp & Dohme plant tells an assistant that watching the resistance of distilled water, on the Micromax Recorder, is a necessary first step in preparing "pyrogen-free" water for bottling.

## STILLS PRODUCE PURER WATER WITH HELP OF MICROMAX RECORDER

A demand for all the high-purity water their automatic stills can produce is one of the wartime problems of Sharp & Dohme Inc. In meeting it, the Company has found that a continuous, automatic record of water resistance, supplied by Micromax Recorders, not only warns of impurity and saves water but helps locate the source of trouble.

This Micromax is rugged and highly dependable. If you need one, an L&N engineer will gladly help in its selection; or if you want a Catalog, ask for No. EN-95



LEEDS & NORTHRUP COMPANY, 4885 STENTON AVE., PHILA. PA.

**LEEDS & NORTHRUP**

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl Ad N-95-702(1C)

When inquiring specify CP8369—see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## "That's Interesting"

### Kit for Desalting Seawater

The recently developed process for desalting sea water which employs a small briquet of chemical and a plastic bag is recommended by the Naval Medical Research Institute and has other official sanction. A solution to this problem has been sought for centuries. As far back as 1516 crude filtering methods were attempted and stills were in use in 1684. Only recently has the purification of water for those adrift in small boats or on rafts been given attention. The particular outfit referred to here is produced by Permutit Co. Each briquet weighs only one sixth as much as the water it produces. The complete kit weighs only 3½ lbs.

### Handicaps An Asset

Handicapped persons are now being widely employed with excellent results in various industries. Many blind workers demonstrate superior skill and efficiency in some jobs because of acute sensibilities, and their attention is not easily distracted. In certain wood industries, deaf mutes are preferred for performing operations on high speed machines such as planers and machines with revolving cutters as they are little affected by noise, often a fatigue hazard.

### Honor Master Quartz Blowers

Master quartz blowers were presented with a First Honor Award at the recent 19th Exposition of Chemical Industries held in New York City. The presentation remarks emphasized the fact that while machines have been invented to blow quartz, experts are agreed that one has yet to be found to equal in quality the output of a master quartz blower, whose work is freer from impurities, and has less physical defects and transmits radiations better than any machine blown product. Master quartz blowers working with fused quartz under tremendous heat, make chemical apparatus with a tolerance of 10/10,000 of an inch.

### More Sperm Oil Now Available

The war has greatly increased the demand for sperm oil used in such processes as leather and textile manufacture, rubber and paper production and in making cutting oil and heavy duty engine oil additives. Production declined with the curtailment of whaling activities as demand increased. It has been under increasingly rigid control since Oct. 16, 1941. The Food Distribution Administration (U. S. Dept. Agriculture) announced as of December 3 that allocations for essential uses in December and January had been increased.

### Plastic Plumbing Supplies

An article in a recent issue of Bakelite Review describes several new applications of plastics in the plumbing accessory field. One is a Bakelite polystyrene toilet tank float that is said to provide longer wear than copper type, is more buoyant and will not dent and should provide savings in vital metal. Another is an elbow pipe of white cellulose acetate. A third is a molded faucet handle which features light weight and unusually attractive appearance. Only 43 reported failures in 500,000 molded indicates service capacity.

### Water Stream Bites Off the Bark

A new method of removing the bark from logs which saves nearly 20% more of the available wood over former processes is mentioned in Ohmite News. Jets of water at 1400 pounds pressure remove the bark as easily as the stream from a garden hose washes mud off a car. The jets travel the length of the log which is revolved four to seven inches each time a strip of bark is cleared.

### Microphotography Used in 1870


Microphotography was originated during the Franco-Prussian War. A French photographer, Dragon, conceived the idea of printing messages on large sheets of paper and then reducing them photographically so that extensive dispatches could easily be carried by pigeons. More than 100,000 communications were sent in this manner.

(Continued on page 103)

*Another*

# PORTER

## EXCLUSIVE!



... the new

**Porter Side-Entering Mixer can be repacked from the outside in 5 minutes ...**

1. Without Draining Tank
2. Without Loss of Liquid



**PROCESS EQUIPMENT DIVISION:**  
Agitators, Mixers, Blenders, Autoclaves,  
Kettles, Pressure Vessels, Driers,  
Ball and Pebble Mills.

**LOCOMOTIVE DIVISION:**  
Diesel, Diesel-Electric, Electric, Steam,  
and Fireless Steam Locomotives.

**QUIMBY PUMP DIVISION:**  
Screw, Rotex, Centrifugal, Chemical Pumps.

**ORDNANCE DIVISION:**  
Projectiles, Heavy Forgings, Breech Blocks.

This new Porter Side-Entering Mixer has an externally-accessible stuffing box and an ingenious device for sealing the liquid in while packing the stuffing box from the outside. Other advanced features in the new mixer include weather-proof motor cover, simplified lubrication system, and adjustable motor support. Descriptive folder on request.

### H. K. PORTER COMPANY, Inc.

GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA  
FACTORIES:

PITTSBURGH, PA.  
BLAIRSVILLE, PA.

NEWARK, N. J.  
NEW BRUNSWICK, N. J.

# NEW Baker Truck Catalog

**GIVES THE ANSWERS TO YOUR MATERIAL HANDLING PROBLEMS**



Here's real help for any plant or warehouse faced with transportation problems. The Baker Electric Truck Catalog No. 52 is a handbook of information, designed to facilitate selection of the proper equipment for any set of requirements. It describes the 47 standard Baker Electric Trucks and many special models for unusual handling operations. Actual case histories show Baker Trucks speeding production, saving time and money and conserving man-power in a wide variety of installations. You can profit from the experience of others in solving your problems.

Any executive concerned with material handling will find this book a valuable source of information. Write for your copy.

**BAKER INDUSTRIAL TRUCK DIVISION**  
2163 W. 25th St. of the Baker-Raulang Co. Cleveland, Ohio  
In Canada: Railway & Power Engineering Corporation, Limited

**Baker INDUSTRIAL TRUCKS**

When inquiring specify CP8371 — see information request blank, pgs. 2-3

## PORO-STONE FILTRATION for ACIDS AND CORROSIVE LIQUIDS

• Adams Poro-Stone Filters are supplied in two types—the rubber-lined "CFR" and lead-lined "CFL" — each designed for the specific conditions to be encountered. Totally enclosed and compact, these filter units are easily installed, and readily cleaned by back washing. Heavy-duty construction, plus all internal parts protected against corrosion, Adams Poro-Stone Filters assure long serviceability, minimum maintenance time and expense, on a wide variety of industrial applications. Write for Bulletin 302, containing full details.

**R. P. ADAMS Co.** 69 CHICAGO ST. BUFFALO, N. Y.

## ADAMS Poro-Stone ACID FILTERS

When inquiring specify CP8372 . . . see information request blank, pgs. 2-3

## New Solutions of Plant Problems

The solutions here given are selected because of their ideas in the application of available equipment or materials to overcoming certain tough plant problems. Many of these suggest basic ideas applicable in kindred or very different problems of process production.

### Infra-Red Gas Burners Cut Paint Curing Time of 1-1/2 Hrs. to 6 Min.

*Conversion of indirect fired oven also reduces length 100 ft., speeds production, lowers costs*

**Problem** — Plant sought to increase efficiency of indirect fired conveyor type oven used to dry paint on metal and wooden parts. Reduction in its length of 180 feet, much shorter drying cycle, fuel economies, and retention of the original paint formulation were among the most important of many factors. The floor conveyor traveled at 24 in. per min. and the paints formulated for a cycle of 1 1/2 hrs. at 300° F. Production of the plant includes radiator core housings, fenders, fender brackets, numerous hardware items and plywood and oak seats.

**Solution** — The oven was converted to employ "Infra-Red Principles" gas burners (radiation of which is form of infra-red rays — see top picture and insert on cover) and two overhead monorail conveyors, travelling in opposite directions were added, having a top speed of 10 ft. per min. and low speed of 8 ft. per min. Floor conveyor, used for heavy products adjusted speed of 10-14 ft. per min.

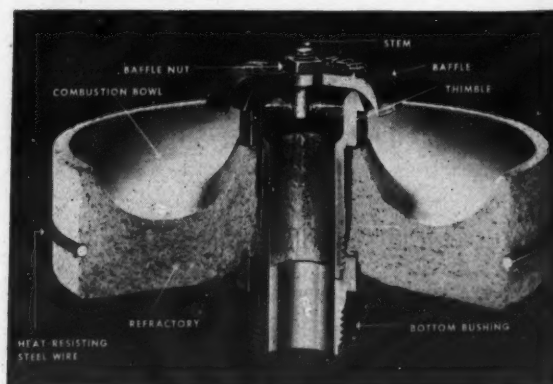
The burners are easily visible on either side at bottom in top cover illustration.

**Results** — Reduction in length of oven of 100 ft. Length now 80 ft. including 10 ft. vestibule at each end of oven. The oven provides great flexibility, handling anything within scope of the annual production of the plant from 150° to 450° F. Any temperature range, either up or down can be accomplished in 7 min. permitting a complete paint change within that period without stopping the line of production. It will be noticed that the conveyor speed will not permit the cure cycle to be longer than 6 1/2 min. in the heat zone or 10 min. overall as compared with the 1 1/2 hrs. formerly required. Plant states that colors on parts are now matched more evenly. The original paint formula as perfected for the old method of production is still used. Wood parts are run through with same ease and satisfaction as metal. No temperature drop so far experienced despite size of load. Total weight run through oven 46,375 lbs. per hr. Fuel consumption is low. Focus of burners on actual surface is unnecessary. Pure oven atmosphere is always present. (Cover photos and data on installation — Hayes Mfg. Co., Grand Rapids, Mich.)

**Description** — In applications with recirculating systems as in paint drying, this refractory type infra-red burner is said to reduce fuel costs to a fraction of indirect fired equipment and to increase production as much as 300%. In various cases operating time is reduced 50%. In addition to paint drying and similar industrial operations, wide range of applications include use of burners with high pressure steam boilers, heating systems and food processing. Also, in melting, vaporizing, preheating, annealing, carburizing. The refractory is made of aluminum clay, molded and baked at temperature of 3100° F. Practically all radiation is in form of infra-red rays. Burners can be applied in both high and low pressure gas applications. Operate in many industries under full automatic control. Accompanying illustration shows design and construction details. Old equipment easily converted to these burners. Operating temperatures of 2300° F. is attained in 45 seconds. Burner sizes range from 2 1/2 in. to 12 in. diameters. Catalog on request.

**BURDETT MFG. CO., Dept. CP, 19 N. Loomis St., Chicago, Ill.**

When inquiring specify CP8373 — see information request blank, pgs. 2-3



INFRA-RED BURNER . . . uses available gas from manufactured to hydro-carbon

CHEMICAL PREVIEW



## New Solutions

### Air Conditioning The Answer To Processing, Storage Problems

*Product quality, production economies achieved by close control of plant atmosphere*

**Problems** — Controlled temperature, humidity and air cleanliness are desirable if not imperative in processing operations. Such regulated atmospheric conditions may be the sole or a contributing factor to preserving or improving product quality, faster production, lowered costs, bettered working conditions. To illustrate this a number of typical problems and solutions through use of suitable air conditioning equipment the following are very briefly presented.

**Problem** — In spectrographic inspection erratic arc performance was encountered — distortion in spectrum photo — incorrect density values in spectrum lines, dust flecks on optics, deterioration of film.

**Solution** — Maintenance of proper conditions of temperature and humidity and removal of air borne dust with air conditioning.

**Problem** — In instrument assembly difficulties were caused by perspiration marks on highly polished surfaces — air borne dirt settled on small parts — also condensation was troublesome on part surfaces.

**Solution** — Holding of temperature and relative humidity at correct levels and filtering out air borne dust with air conditioning equipment.

**Problem** — Storage of sandpaper presented condition typical in handling similar materials. In this case the paper became too dry, causing abrasive to become detached. With the same material too much dampness resulted in rapid deterioration of product.

**Solution** — Proper level of humidity maintained paper in prime condition.

**Problem** — Manufacturer of capsules found costs high largely due to irregular temperatures and humidity causing capsules to depart from close form specifications.

**Solution** — Here again close humidity control corrected difficulty.

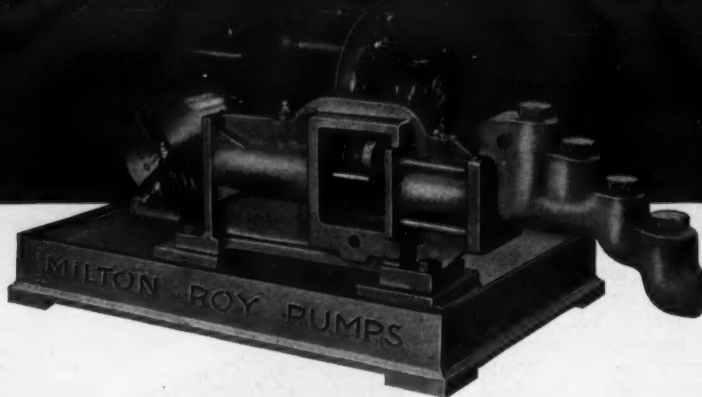
**Description** — Equipment providing temperature control, humidity control, air cleaning, ventilation, air circulation are illustrated and described in booklet (No. 3 AC — 0201).

WESTINGHOUSE ELEC. & MFG. CO.,  
Dept. CP, E. Springfield, Mass.

When inquiring specify CP8374  
— see information request blank, pgs. 2-3

For more information on product at right, specify CP 8375  
... use information request blank between pages 2-3.

# MILTON Roy Step-Valve PUMPS



## Tailor-Made for Each Specific Purpose . . . to Handle Materials in Exactly-Controlled Volume

- **Milton Roy Pumps are handling synthetic rubber latex (butadiene-styrene) successfully.**
- **They are pumping salt slurries with concentrations up to 60% successfully.**
- **They are pumping against pressures up to 20,000 psi successfully.**
- **They are handling many materials impossible or too costly to pump by any other means, successfully.**

Milton Roy Chemical Pumps are built by chemical and mechanical engineers to meet individual performance specifications. The exclusive, patented Milton Roy Step-Valve is basic in all these pumps, but this basic design is varied . . . in size, capacity, diameter of ball-checks and seats, metals of construction, thickness of walls, plunger diameter and length of stroke, and in other respects, as may be needed to meet specific operating conditions.

This "Engineered" Step-Valve has high volumetric efficiency . . . its double-ball-checks are instantaneous and positive in action . . . slippage is negligible. It is non-clogging and self-cleaning . . . even when pumping viscous materials or fibres or other solids in suspension. It makes it possible, with Milton Roy Pumps, to accurately control volume in pumping . . . from zero to maximum capacity. It may be jacketed, for temperature control; built for high-pressure catalytic or hydrostatic test purposes; built in any metal that can be cast or forged and machined, or machined from the solid, for practically all chemical applications.

Hundreds of Milton Roy Pumps are now serving efficiently and economically, in many of the most important plants in most of America's great industries.

If we can help in your war effort, 'phone or wire.

MILTON

PUMPS



1310 E. Mermaid Ave., Chestnut Hill - Philadelphia, Pa.

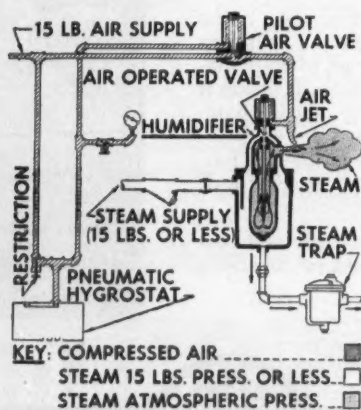
## New Solutions

### Explosion Proof—Compressed Air Operated-Steam Type Humidifier

*Maintains required conditions safely at low cost preserves quality; same humidifying unit available in standard electrically operated models*

**Problem** — Moisture content of materials is of importance in handling and manufacture in process industries. While some industries or processes require humidification the year 'round the need for humidifier applications is often required during winter only. Static hazards increase during winter when indoor humidities are low. Other difficulties that must be met include loss of weight, strength, quality in hygroscopic materials, improvement in workability of materials, control of drying processes and maintenance of healthful and comfortable working conditions. Installation, operation and maintenance cost of humidifying equipment is also a factor.

**Solution** — A special unit humidifier operated by compressed air has been developed for use where there are mixtures of air and gas or air and dust or where explosive materials are in process. As shown by the diagram, this standard unit includes a pneumatic hygrostat, a pilot valve and the humidifier (here Model CK-2) fitted with air actuated steam valve, air outlet nozzle, steam strainer and drainage trap. A supply of compressed air at 15 lbs. gauge pressure is necessary, together with a supply of steam at any pressure from 1 to 15 lbs. per sq. in. gauge. When sufficient humidity is present, the air relief valve in the pneumatic hygrostat is open, allowing air to bleed to the atmosphere faster than it can pass the restriction in the pilot line. Under these circumstances no pressure can build up in the rest of the pilot line leading to the main air valve, which stays closed. When relative humidity falls below desired point, the air relief valve in the hygrostat closes. Air builds up pressure on the diaphragm of the main air valve causing it to open. Compressed air flows to air operated steam valve on the humidifier



COMPRESSED AIR HUMIDIFIER ASSEMBLY



Whether you figure on better ways of doing old tricks or are whipping up a batch of new products for post-war, Readco engineers have the processing equipment you need.

This Single Packing Gland Double Arm Vacuum Mixer with exclusive features that eliminate the possibility of contamination is an example. It was developed for the manufacture of paints, flush colors, inks, phenol, urea, cellulose acetate compounds and plastics in general, as well as many pharmaceutical products. It is designed for operation under high vacuum, enabling the evaporation of moisture or solvents from materials being mixed at temperatures below their atmospheric boiling point. It is also adapted for materials requiring treatment in inert atmosphere or under elevated pressures.

Readco builds a complete line of these Single Packing Gland Double Arm Vacuum Mixers with working capacities from 2.5 gallon to 400.0 gallon, with total capacities from 4.0 gallon to 800 gallon. Readco also builds a complete line of laboratory mixers, pilot plant mixers, standard and special mixers, as well as material handling equipment and automatic dustless weigh hoppers. Write today for a complete Readco Catalogue.



### SINGLE PACKING GLAND CONSTRUCTION . . .

Quickly removable shaft seals, an exclusive READCO development, are installed between the mixing chamber and the vacuum chambers on each arm shaft. One seal against leakage on a rotating member is used where the drive shaft projects through the arm gear case.

### CLOSE CLEARANCE MIXING AGITATORS . . .

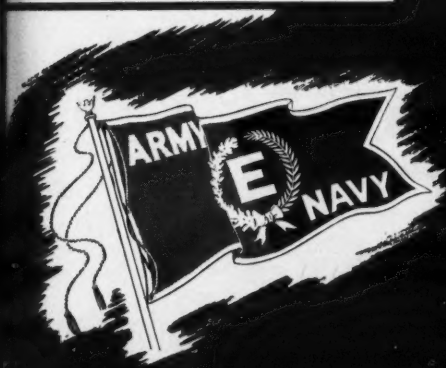
Mixing arms are overlapping or tangential, of Sigma or other design as required, to impart perfect kneading and mixing action to the mass. Shape of arms enables ready clearance of mass from face of arm and reduces compression of the mass against bowl.

### HEAVY MIXING BOWL . . .

Substantial cast bowl ends are secured to heavy bowl center section by means of cap screws. Bowl ends are cast integral with vacuum chambers in which are mounted anti-friction or plain radial and thrust bearings for supporting the main arm shafts.

### ADJUSTABLE VACUUM COVER . . .

The bowl cover is supported in an eccentric trunnion bearing mounted on a supporting column to provide adjustment. The cover support is hollow and forms a flue which is connected to the vacuum line without the need of flexible connections.



# Read

**MACHINERY CO., Inc.**  
**YORK, PENNSYLVANIA**

—When inquiring specify CP8376 . . . see information request blank, pgs. 2-3—

JANUARY - FEBRUARY, 1944

## New Solutions

causing it to open. A small amount of air from the main line (approx. 1.6 cfm) is allowed to escape through a restricted nozzle at the humidifier. This helps circulate the air around the humidifier and serves as a relief vent for the humidifier valve during the closing part of the cycle.

**Results** — No sparking hazards as with electrically operated units. Prevention of costly loss of weight and loss of quality. Improved workability of materials. Typical applications where such humidifications indicated include sole leather, textile fibers, paper boxes, glue. Low cost of units. Estimated average cost of humidification about two cents an hour for 40,000 sq. ft. of area. Healthier, more comfortable working conditions. Design provides for muffling sound of escaping steam. No condensate discharged along with steam.

**Description** — The compressed air models the one described in detail here and another for heavy duty employ the same humidifier unit in the standard electrically operated models. The latter have electric fans for circulation and humidstat with multiple human hair element. The several models in both types offer a selection for specific needs of operations involving such materials as textiles, fibers, papers, wood, soap, tobacco, various inorganic materials and many food products. Bulletin No. 158 contains specifications and data helpful in making selections.

ARMSTRONG MACHINE WORKS, Dept. CP,  
Three Rivers, Mich.

—When inquiring specify CP8377  
— see information request blank, pgs. 2-3

### 1 Man Barrel Truck-3rd Wheel Support Handles Loads Up to 1000 Pounds

All welded steel construction barrel trucks featuring a simplified stream lined design for easy, efficient operation are described in 4-page-folder. Several types to meet specific requirements in handling such containers or loads as wooden barrels, drums, crates, carboys, kegs. Also pictured and described in a special lift — (a lifting and pulling jack) for raising front end of "semi-live" skid platforms. Skids of this type are also shown. Together they provide a flexible, labor saving system applicable to special needs. Bulletin 42 — "One Man Barrel Truck."

SABIN MACHINE CO., Dept. CP, 5436 Carnegie Ave., Cleveland, 3, Ohio.

—When inquiring specify CP8378  
— see information request blank, pgs. 2-3

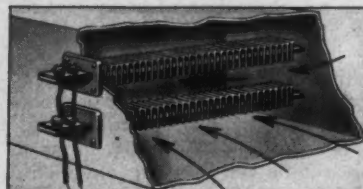
### Fabricating Stainless-clad Steel

Catalog gives information on analyses, applications, manufacture, styles of heads and standard size of sheets and plates. It also gives a comprehensive explanation of patented assembly method used in producing this stainless-clad. Of special interest and sections on deep drawing, grinding, polishing, cleaning, gas-cutting, welding etc. Copies available on request.

JESSOP STEEL CO., Dept. CP, Washington, Pa.

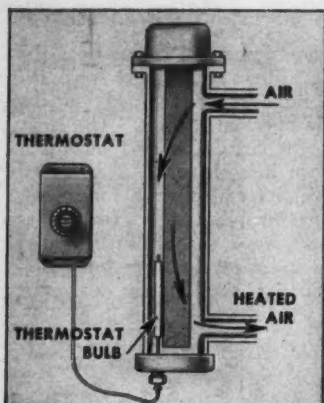
—When inquiring specify CP8379  
— see information request blank, pgs. 2-3

## How to heat air for process with **CHROMALOX** ELECTRIC HEATING UNITS



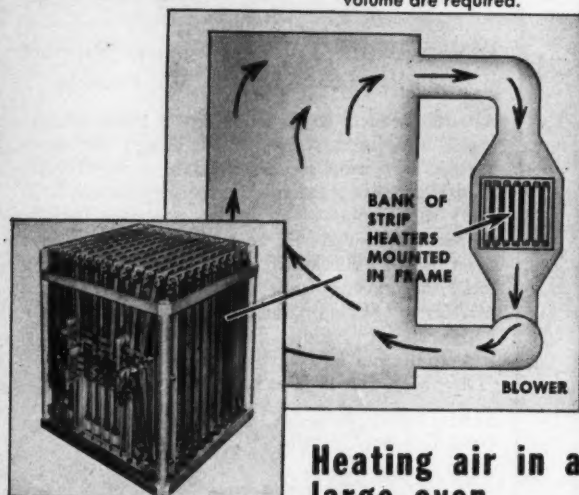
### Heating air in a duct

Use Finstrip with flange, installed as shown, which leaves terminals outside the heated area. Available with steel sheath and fins for temperatures to 750 deg. F. Monel sheath and Monel fins for extreme high temperatures.



### Heating compressed air

Use Chromalox NWH heater. Unit is installed in pipe, with inlet and outlet connections. Thermostat and bulb can be supplied to maintain required temperature. The assembly is complete, including fitted heat insulating jacket if required. Two or more of these units can be used in series, when higher temperatures or volume are required.



### Heating air in a large oven

Above are just a few of many possible methods of heating process air. Our engineers will cooperate in selecting the method you need. Give us details and sketch. Chromalox catalog on request.

A bank or group of strip heaters mounted in a rigid frame, enables easy installation. The unit is placed in a circulating duct, and the air pulled through it by blower. This is a 72 kw unit, capable of creating extremely high oven temperatures. Thermostat control is advisable.

**EDWIN L. WIEGAND COMPANY**  
7517 Thomas Blvd., PITTSBURGH 8, PA.

When inquiring specify CP8380 — see information request blank, pgs. 2-3

Page 10

## New Solutions

### Plastic Extractor Cup Increases Orange Juice Yield — Stops Waste

*Replaces rubber type that became swollen and failed to hold fruit firmly*

**Problem** — Maximum juice extraction in preparing citrus juices for packing is now more imperative than ever before. A packer's juicer is said to have a top capacity of approximately 150 gallons per hour but actually this figure not often reached. One of the principal factors in this less than "ideal" yield is that rubber cups used to hold oranges against spinner are swollen out of shape by fruit oils and acids.

**Solution** — Flexible cups of koroseal replaced the rubber type that had been used.

**Results** — Oils and juices have no effect on koroseal cups that detracts from their operating efficiency over long periods of service. Fruit is uniformly held firmly against the spinners and maximum yield of juice is attained.

B. F. GOODRICH CO., Dept. CP, 1931 Bay St., Los Angeles, 21, Cal.

When inquiring specify CP8381 — see information request blank, pgs. 2-3

### Plastic Conveyor Belt Prevents Sticking Of Small Parts

*One of variety of products produced from "compar" derivatives and compounds such as tubing, sheets*

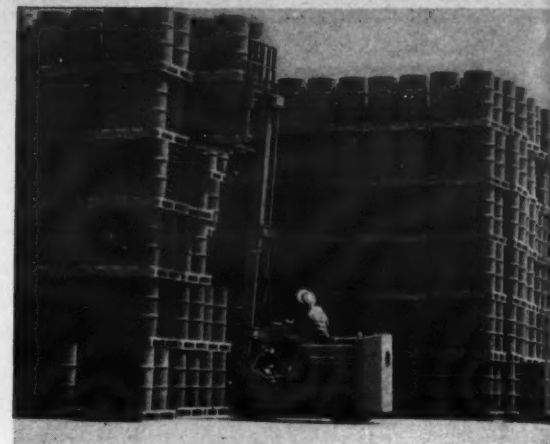
**Problem** — Manufacturer found that small parts required excessive amount of handling because they stuck to metal mesh conveyor belts.

**Solution** — Belt of plastic type (vinyl resin derivative) performed well under test and was adopted.

**Results** — Sticking or catching of parts to belt eliminated



PLASTIC CONVEYOR BELT ENDS STICKING OF PARTS



**BIG JOB? NO!** Huge volumes of materials can be moved and stored in a short time by Towmotor and one man. Production is speeded — time, storage space, money and manpower saved! For the complete story write Towmotor Corporation, 1218 E. 152nd Street, Cleveland 10, Ohio.

ASK FOR "DATA FILE"

## TOWMOTOR

THE 24-HOUR ONE-MAN-GANG

When inquiring specify CP8382 — see information request blank, pgs. 2-3

## AVOID MISTAKES!

**Expedite Office and Shop Work  
this Modern, Accurate, Speedy Way!**

### A-PE-CO "Photo exact"

**A-PE-CO PHOTO-  
COPIES MADE  
FAST BY ANY-  
ONE — ANYTIME**

Eliminate errors in copying! Lighten load on typewriters and other office machines! A-PE-CO does work that no other office machine does. Give all departments complete, accurate, first-hand information at the same time! Save time in office and shop! Use A-PE-CO photo-exact copies, made easily and quickly by any inexperienced employee, right in your own offices. A-PE-CO meets present needs and is a valuable aid in postwar planning. A-PE-CO pays for itself quickly. When may we show you this modern, versatile equipment?

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**\$5500**

When inquiring specify CP8383 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## New Solutions

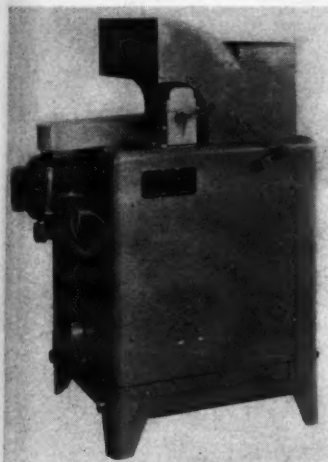
with consequent savings in labor and smoother production. Belting has good abrasion resistance and wearing qualities. **Description** — The belting described here is one of numerous products made from synthetic plastics identified as "compars" — a group of coal-limestone and air derivatives. The producers state that the name "compars" is used to distinguish between basic polyvinyl alcohol resins, which are water soluble and the derivatives, compounds and modifications described here. Some types are described as resistant to organic solvents, including aliphatic and aromatic hydrocarbons and chlorinated hydrocarbons, others as exhibiting low permeability to industrial, refrigerant gases and high tensile strength, flexibility at widely varying temperatures. It is said that it can be milled, much like rubber, producing a thin cohesive film. Further transformation may be accomplished by extrusion or molding. Major applications include hose and hose assemblies, tubing, gaskets and seals, protective garments. Also available in solution form. Further detailed information regarding physical properties on request.

RESISTOFLEX CORP., Dept. CP, Belleville, N. J.

When inquiring specify CP8384 — see information request blank, pgs. 2-3

## Evaporative Cooling Principles Used to Cool Compressed Air

*Increased capacity in compact after cooler unit, also applied to gases generated for industry*



COOLER . . . protects equipment

**Problem** — Cooling of compressed air to provide drier air, prevent water damage to pneumatic equipment through wearing of parts because of washing out lubricants, freezing up of pneumatic tools, halting production, damage to work by water in paint sprays and rusting of metallic shot in blast cleaning equipment.

**Solution** — A new after cooler has been designed to provide the desired lower temperatures. It uses the evaporative cooling principle. Air, drawn

by a fan through a water spray across coils containing the compressed air is the cooling medium and temperatures within 10 of wet bulb temperature can be maintained.

**Results** — This after cooler is said to permit lower temperatures by 10 to 25 than generally obtainable by various conventional coolers. The compressed air produced contains much less water than generally experienced.

NIAGARA BLOWER CO., Dept. CP, 6 E. 45th St., New York 17, N. Y.

When inquiring specify CP8385 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

# ONE ANSWER

## TO 3 QUESTIONS ABOUT TRANSFORMERS

- 1 How can heavier loads be handled?
- 2 How can this equipment be protected against loss?
- 3 How can service interruptions be reduced?

## LOADING BY COPPER TEMPERATURE (L.C.T.) WITH CSP TRANSFORMERS

The answer to these questions is based on this fact: Loading by Copper Temperature (L.C.T.) increases usable transformer kv-a by 25% to 40% — with complete safety!

- 1 **L.C.T.** puts the reserve thermal capacity of a transformer to work. Emergency overloads can be carried longer, without danger, right up to the thermal limit of the windings.
- 2 **L.C.T.** gives sure protection against burnouts — positively disconnects a dangerous overload before windings can be damaged.
- 3 **L.C.T.** provides a visible indication of dangerous overload conditions so that load can be arranged, if necessary, to avoid power "blackouts."

Ask your Westinghouse engineer to give you the facts about this transformer development. He'll be glad to submit definite recommendations . . . glad to help you get more out of your transformer applications. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., Dept. 7-N. J-70398



# Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

## TRIPLE ACTION FOR PROTECTING TRANSFORMERS

**MEASURES** the amount of overload. Loading by Copper Temperature uses actual winding temperature, takes into consideration load duration and magnitude.

**SIGNALS** approach of thermal capacity. Unnecessary interruptions of service are avoided because a red warning light flashes when dangerous winding temperature is being approached.

**DISCONNECTS** load from transformer. If overload actually becomes dangerous, an internal circuit breaker automatically removes the load from the transformer.

## CSP TRANSFORMERS

When inquiring specify CP8386 . . . see information request blank, pgs. 2-3

## See **BURCOTT MILLS** For Chemical Industry Fabrics



Write, Wire or phone us about any textile problem you have — especially if government specifications are necessary. We can supply practically any fabric you may require in war work.

### CHEESECLOTHS

All grades and thread constructions of bleached and unbleached cheese-cloths — all are commercially lint-free. Perfect straining qualities. Also mill remnants as low as 1/2¢ per yard.

### SHEETINGS

Most every type of textile necessary to the chemical industry including print cloth, canvas, muslins and flannels. Strips can be cut to any width required.

### FILTER and STRAINING CLOTHS

Many of America's largest plants served by BURCOTT MILLS for many years. We have the filter or straining cloth you need — send for samples.

Write, wire or phone for any samples or prices.

**BURCOTT MILLS** 616-D W. FULTON ST.  
CHICAGO 6, ILL.

When inquiring specify CP8387 — see information request blank, pgs. 2-3

## New Solutions

### Fixture Adapts Radiation Unit To Measure Stove Dome Temperature

*Unit serves where temperatures are out of range of thermocouple; in wall, duct, lining and where space is limited*

**Problem** — Stove dome temperatures have long been considered important to the efficient operation of the stove in connection with blast furnace operation. In attempting to take readings by use of thermocouples the difficulty has been that with the thermocouple extending through the stove lining so as to read the temperature desired, the life of the thermocouple has been limited. The problem has been to design a fixture with which the radiation Pyrometer unit could be used.

**Solution** — Fixture has been made available as illustrated in drawing. Unit is mounted in the manhole cover at top of the stove with tube extending down into the key bricks on stove lining. Pyrometer thus sighted on top of checker brick work records maximum brick temperatures. Installation of equipment to eliminate dirt, oil, water in air will eliminate need for frequent cleaning of plate glass seal.

**Description** — Unit designed for use on side pass stoves. On center pass stoves unit is mounted at angle to stove wall so that it will sight on checker brick. The fixture consists of a gate valve to enable the unit to be removed for service and an air purge to cool the lens and unit. For installation similar to that in drawing, remove manhole

## AN *All-Electric* ADJUSTABLE-SPEED DRIVE FOR A-C CIRCUITS

SPEED RANGES up to 16 to 1

SIZES 1 TO 30 hp.



### SPEED CHANGES.

Speed adjusted smoothly over a wide range while machine is in operation.

### QUICK STOPPING.

Obtained electrically from speed adjuster handle or stop button.

**SLOW FOR THREADING and INCHING.** Safe for setting-up and for close inspection in process.

**SMOOTH ACCELERATION.** No clutches. Smooth acceleration and deceleration to protect light material in motion.

**ALSO:** A direct space-saving drive; speed-control convenience without limitations; reversing; start and stop without interfering with speed setting; ample starting torque.

Send for your copy of Bulletin 311 — FREE

### RELiance ELECTRIC & ENGINEERING CO.

1088 IVANHOE ROAD

CLEVELAND, OHIO

Sales Offices in Principal Cities

When inquiring specify CP8389 — see information request blank, pgs. 2-3

## Hidden Profits in Chemicals!

### FROM LIQUID TO POWDER IN ONLY SECONDS WITH BOWEN PROCESS OF SPRAY-DRYING



Many problems pertaining to chemicals, foods, plastics, etc. are finding efficient and economical solutions in the BOWEN process of spray-drying. This remarkable process involves the reduction of fluid or semi-fluid substances to powder by instantaneously evaporating moisture from its atomized particles. Solubility is greatly increased, particle size

is controlled, and the product rendered free-flowing. BOWEN spray-drying equipment is designed and engineered to eliminate the use of critical materials in every way possible. The vital need for this advanced process in both essential and semi-essential fields—its efficiency, dependability and uniformity of product—attest to its practicability for your particular endeavor.

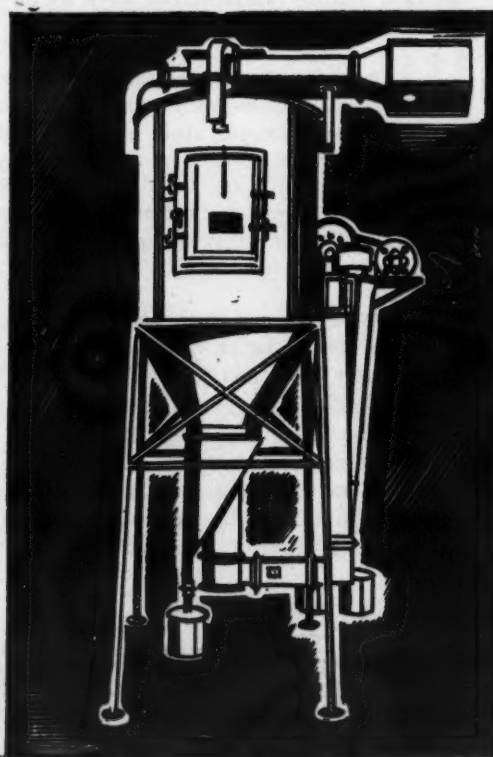
## Bowen RESEARCH CORP.

40 MAPLE STREET



GARWOOD, N. J.

PIONEERS IN SPRAY-DRYING ENGINEERING AND DESIGN



Descriptive literature describing the BOWEN process in detail, will be sent promptly on request; write today.

When inquiring specify CP8388 . . . see information request blank, pgs. 2-3

## COMPACT



### Cleaver-Brooks Steam Generators Save Valuable Plant Space

Because of their exceptional steaming capacity, Cleaver-Brooks oil-fired steam generators often replace equipment much larger in over-all dimensions, having the same HP. capacity. Their compact construction save valuable plant space.

For the time when normal conditions return — write for full information on the many modern advantages of Cleaver-Brooks steam generators. (20 to 500 HP. — Light or Heavy Fuel Oils).

### CLEAVER-BROOKS COMPANY

5124 N. 33rd STREET

MILWAUKEE, WISCONSIN

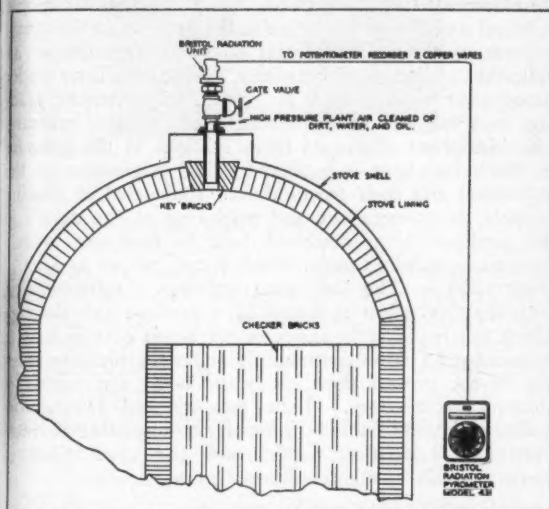
## CLEAVER-BROOKS CO. MILWAUKEE

When inquiring specify CP8390 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## New Solutions



STOVE DOME TEMPERATURE RECORDER

cover and drill flange ring holes for securing the flange to manhole cover. It is also necessary to break a hole through key bricks to clear sighting tube. (Radiation unit and potentiometer used with it and fully described in literature available on request.) The radiation unit is suited for use where high temperatures are out of range of the application of the thermocouple, temperatures for which rare metal thermocouples are used, surface temperatures such as roof, wall, duct, lining and where there are space limitations. Radiation pyrometers available for temperatures above 900°F in recording, indicating, controlling models.

BRISTOL CO., Dept. CP, Waterbury 91, Conn.

When inquiring specify CP8391 — see information request blank, pgs. 2-3

## Bench Type Tool Room Furnace

Available for manual control or automatic control; lever operated door

Uses — For hardening, annealing, heat treating.

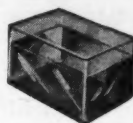
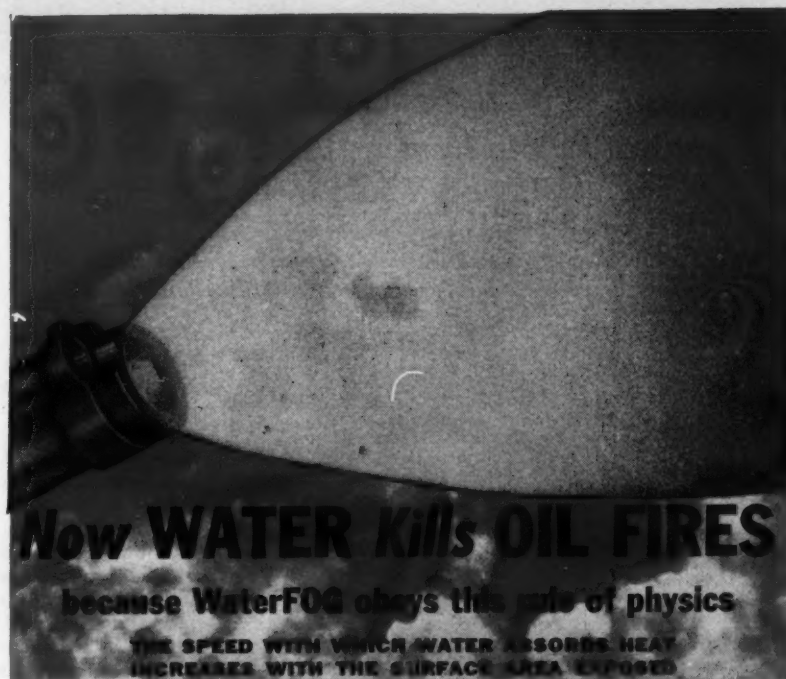
Features — Door is quick acting lever operating type and when in open position can be used as a loading table.

Description — Heating elements are folded and formed nickel chromium units. Outer casing is made of steel, reinforced and lined with different layers of insulation. Welded steel door is brick lined and large enough to substantially overlap the door opening. Furnace can be controlled either manually or automatically. For manual operation it is necessary to use the rheostat in conjunction with the indicating but not controlling pyrometer. The pyrometer indicates the temperature and the rheostat is used to adjust the voltage so as to maintain the desired temperature. If automatic control is desired it is necessary to use an indicating and controlling pyrometer in conjunction with a magnetic switch. Pyrometer can be set at any desired temperature and will control the furnace automatically. This electrically heated tool room furnace — 1850 degrees F continuously operating temperature is 7½ in. wide, 5½ high and 14 in. deep.

HAROLD E. TRENT CO., Dept. CP, Leverington & Wilde St., Manayunk, Philadelphia, Pa.

When inquiring specify CP8392 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



Suppose a "cube" of water has so much surface area. Turning it into a stream increases its surface area.

Breaking it into spray increases it even more. But still that same amount of water is not yet in proper form for fighting flammable liquid fires.

It takes WaterFOG — extremely tiny particles — to give that original quantity of water enough surface area to take heat from an oil fire fast enough!

Furthermore, being light, WaterFOG stays longer in the combustion zone — unlike larger drops which plunge into the liquid, agitating it, encouraging vaporization. WaterFOG, floating down onto the surface, absorbs a maximum amount of heat from the flames and lowers the temperature of the liquid. Then, changing into steam, it expands and envelops the fire in a smothering blanket.

### Thus WaterFOG attacks fire 3 ways:

1. Quenches the burning vapors
2. Lowers liquid temperature to retard vaporization
3. Diminishes supply of oxygen

WaterFOG — created by impinging streams of water — is engineered in correct particle size, fog pattern, and velocity for your conditions. Fixed piping installations, hose nozzles and applicators. Rockwood installations approved by Underwriters' Laboratories and Associated Factory Mutuals, used by Navy, Coast Guard, hundreds of industrial plants. WaterFOG is safe to use on electrical fires. Write for Bulletin 123.

Executives! A colored movie (16 mm.) showing tests of Rockwood WaterFOG is available.

ROCKWOOD SPRINKLER COMPANY  
76 Harlow Street, Worcester, Mass.  
Specialists in Fire Protection Engineering,  
Equipment and Installation since 1907



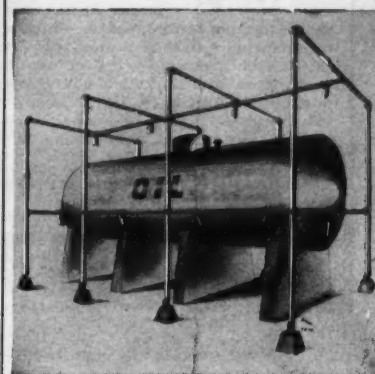
Water Engineered by  
Rockwood Cools. Confines.  
Smothers Oil Fires



## FIXED PIPING INSTALLATIONS FOR EACH SPECIAL HAZARD

Full protection against flammable liquid fires is obtained when a WaterFOG system of fixed piping, heads, valves and automatic control devices is planned and installed by Rockwood engineers.

Skillful engineering assures complete WaterFOG extinguishment on fires in fuel oil, kerosene, mineral spirits and other flammable liquids. Rockwood engineers consider all factors involved in each hazard, including spacing of WaterFOG heads, distance between heads and hazard obstructions, etc.



This drawing shows a typical WaterFOG system engineered to protect an oil storage tank efficiently. Completely automatic systems can be installed for instantaneous fire detection and quick extinguishment.



Portable WaterFOG unit, consisting of nozzle with applicator, is designed for service on regular fire hose lines, projecting low-velocity WaterFOG in "ball" shape. With the applicator removed and a Fog tip inserted, medium velocity WaterFOG is discharged with considerable forward projection; or a solid stream is also provided.

When inquiring specify CP8393 . . . see information request blank, pgs. 2-3



as left—Industrial Multi-breaker, 2 or 3 pole, 15 to 100 amp., common trip, quick make and quick break.

## MULTI-BREAKERS

FOR *Hazardous* LOCATIONS

Square D has broadened its line of cast explosion-proof Multi-breakers—in pace with current wartime requirements • In shell loading, powder, processing and synthetic rubber plants—wherever explosion and fire hazards exist, these Multi-breakers afford low-cost circuit breaker protection • All Class I, Group D enclosures are tested individually at 450 pounds hydrostatic pressure—an added assurance of their strength and stamina on the job. The line also includes enclosures for Class II, Group G locations.

WRITE FOR DESCRIPTIVE BULLETIN



ELECTRICAL EQUIPMENT • KOLLSMAN AIRCRAFT INSTRUMENTS

**SQUARE D COMPANY**

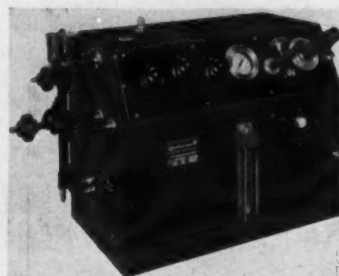
DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP8394 — see information request blank, pgs. 2-3

# ★ INSTRUMENTS of CONTROL

## Instrument Indicates Purity of Liquid While in Process-Pipeline

*Originally developed to indicate purity of butadiene—now offered in modified model to meet requirements of various liquids*



INSTRUMENT embodies refractometer with dipping prism in pressure cell

impractical to collect samples for removal to a testing laboratory. The instrument illustrated and described here is a modification of the original and has application to various liquids.

*Feature* — As no commercial instrument meeting this particular requirement was available the operators (Shell

*Uses* — This instrument was especially developed to meet problems encountered in the continuous production of butadiene. This was one of instrumentation, capable of indicating the purity of the products as it flowed through a processing pipeline, since continuous production made it

Development Co., Emeryville, Cal.) the organization's technical staff found a solution to the problem in the measurement of the physical factor of refractive index as an indication of purity of butadiene. Since butadiene under atmospheric pressure boils at 19° C., refractometric readings must be made under pressure or at decreased pressure. The instrument developed takes readings at the pressure at which butadiene is produced. The originators of the instrument and their technical staff cooperated in making possible the manufacture and marketing of the device in the modified form described here to meet the widely divergent conditions under which it may be put to use. *Description* — The instrument embraces a refractometer, with dipping prism mounted in a pressure cell through which the liquid, (the index of refraction of which is to be measured,) flows continuously under the pressure existing in the process flow-line, while being maintained at constant temperature. Both pressure and temperature maintained within the instrument are adjustable to meet individual installation requirements and applications to various liquids. Detailed information on request.

PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago 47, Ill.

When inquiring specify CP8396 — see information request blank, pgs. 2-3

## Open-Blade Snap-Action Switch

*Less than 6 oz. operating pressure; compact rating 15 amps. on 125 v. AC*



SWITCH . . for control devices, relays

*Uses* — Machine tool control devices and construction of various relays and contactors. Space and weight saving

factors also make it especially useful in variety of applications.

*Features* — Patented rolling spring produces positive snap action with less than 6 oz. operating pressure, permitting smaller coils in relays. Fast action minimizes contact burning.

*Description* — Rating of 15 amps. on 125 volts A. C. Overall size 3 1/16 in. x 11/16 x 1/2. Single pole, single or double throw, set and return types. Designed to permit both pre-travel and over-travel.

ACRO ELEC. CO., Dept. CP, 1342 Superior Ave., Cleveland, Ohio.

When inquiring specify CP8397 — see information request blank, pgs. 2-3

## Electronic Bin Level Indicator

*For coarse and fine dry materials; used with signal lights and can be adapted for use with sound signals or remote signals*

*Uses* — As dry material bin lever indicator. For fine and coarse materials.

*Features* — Operates entirely on electronic principle. No moving parts, eliminating danger of clogging, arching or mechanical breakdown. Easy to install.

*Description* — Device consists of two parts. First is a detector box which is attached to a probe extending into the

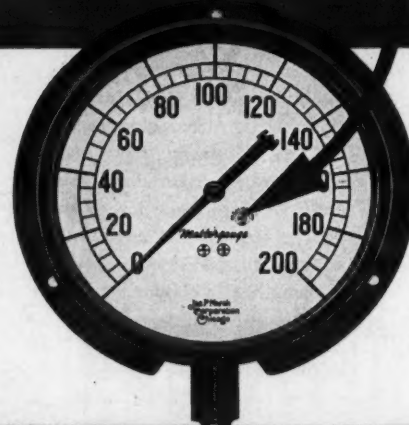
CHEMICAL PREVIEW

# 2 REASONS

**A**ll by itself the "Recalibrator" is one of the most important advances ever made in pressure and vacuum gauges. It is the final answer to the problem of how to correct a gauge that has been knocked out of adjustment—and any gauge can be. A twist of the "Recalibrator" screw is all it takes, and the gauge is accurate again at all points on the scale.

But the real significance of the "Recalibrator" is this—it simply illustrates the excellence of design and construction Marsh has learned through 75 years of gauge making.

You will find evidence of this skill and long experience in every smallest detail, and in the great service records Marsh Gauges have written. For the many vital jobs gauges are being called upon to handle today, it pays to look for the "Recalibrator"—and get a Marsh Gauge.

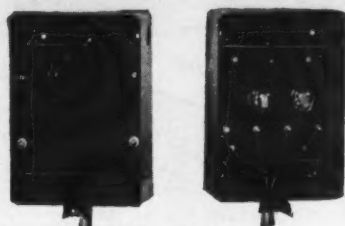


**MARSH  
GAUGES**

When inquiring specify CP8395 . . . see information request blank, pgs. 2-3



## INSTRUMENTS



DETECTOR and signal boxes

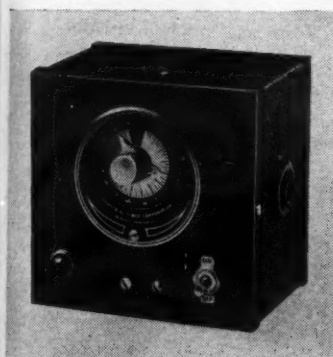
bin. In the box are a series of vacuum tubes. Although highly sensitive and accurate the system is sufficiently rugged and fully protected. Second box is the signal control which is attached to a series of colored lights that show when bin is full, empty etc. Hook up with valve cut-offs, sound makers or remote signal can be readily arranged through a series of appropriate relays. Literature on request.

MAX MOSHER ELECTRONIC CONTROL SYSTEMS,  
Dept. CP, 130 W. 42nd St., New York 18, N. Y.

When inquiring specify CP8398 — see information request blank, pgs. 2-3

### Signalling Timer Provides For Remote Buzzers Or Lights

Completion on interval indicated instantly by alarm — wide range of models



COMPACT SIGNALLING TIMER

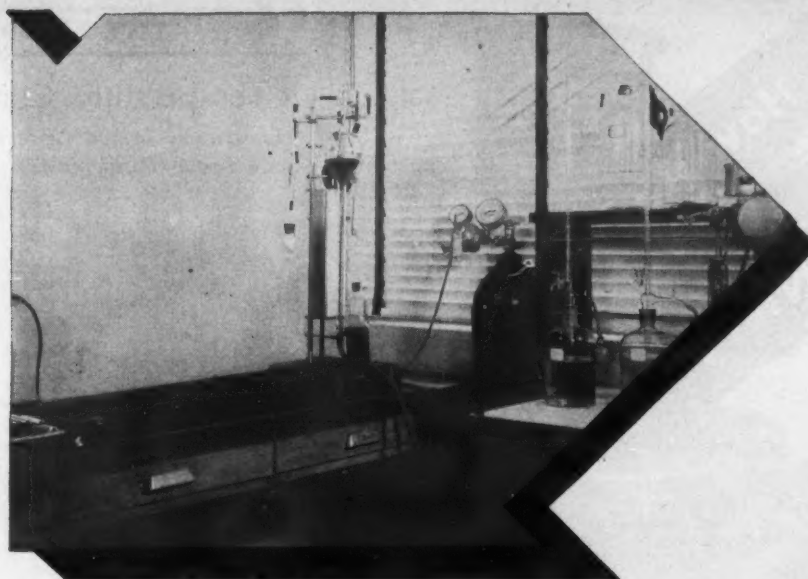
the dial, a circuit is closed which operates a pilot light indicating that the time interval has started. The moving pointer revolves counter-clockwise toward zero; at any second during the interval the exact time elapsed is shown on the dial. When an interval is completed an audible alarm sounds and the pilot light goes out. Buzzer continues until toggle switch is snapped off or pointer moved to again start time interval.

**Description** — Operates on alternating current, 115-230 v., 25, 50, 60 c. 1000 watt voltage and frequency to be specified. Motor is slow speed, self-starting synchronous type. Black case 5 x 5 x 3½ attaches to panel or switch box. Socket on side provides for connection of additional lights and alarms. Eight models provide selection of intervals at maximums of one minute to three hours. Bulletin A-14 describes these Series S Timers.

INDUSTRIAL TIMER CORP., Dept. CP, 117 Edison Pl., Newark, N. J.

When inquiring specify CP8399 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



## Is your Laboratory equipped to do the job in 1944?

Lindberg Laboratory furnaces, hot plates and control, modern in design, are engineered and built to meet the exacting everyday requirements of your laboratory.

**Lindberg Combustion Tube Furnace**—Temperatures to 2500° F. For fast modern volumetric as well as gravimetric types of determinations. Equipped with built-in transformer, all necessary control, Globar elements and tube adaptors.

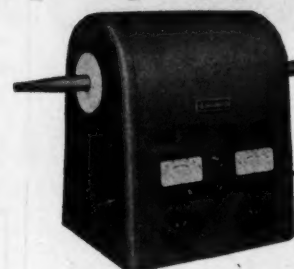
**Lindberg Box Furnaces**—Temperatures to 2000° F. Expressly built for the many usual laboratory jobs, such as: ash determinations, fusions, etc. Equipped with heavy, low voltage, rod type elements. Built in two sizes with chambers 4½" x 10" x 4" and 7½" x 14" x 5½".

**Lindberg Hot Plates**—Temperatures to 900° F. These hot plates, available in three sizes, 10" x 12", 12" x 20" and 12" x 30", have special cast metal tops. Coiled nickel-chromium elements are placed to give uniform fast heating.

The Indicating Pyrometer and Input Control mounted in the same case provide the laboratory with "stepless" temperatures and embody the famous Lindberg "percent of current input" control.

For complete details and information get in touch with your laboratory equipment dealer today.

**LINDBERG ENGINEERING COMPANY**  
2450 WEST HUBBARD STREET - CHICAGO 12, ILLINOIS



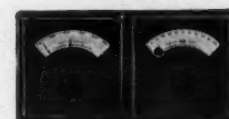
Combustion Tube Furnace



Box Type Furnaces



Hot Plates



Lindberg Input Control and Pyrometer

# LINDBERG

Well-known Throughout the World as the Leaders in Developing and Manufacturing Industrial Heat Treating Equipment.



When inquiring specify CP8400 . . . see information request blank, pgs. 2-3



**T**HIS is one of the extensive lines of Kinney Pumps — a single-stage, dry vacuum pump assembled on one base with motor and separator.

The arrow points to an ASCO One Way, Solenoid Valve which controls the flow of lubricating oil. Its function is to automatically cut off the oil when the pump stops for any reason and to cut it in when operations are resumed.

Two points concerning this application are worth keeping in mind: (1) Kinney finds a **solenoid valve** the best equipment for controlling oil flow; and (2) Kinney finds ASCO a reliable and effective valve.

Solenoid Valves are so useful in controlling the flow of liquids and gases that they should be considered for every installation and for all equipment handling or operated by liquids and gases. ASCO Solenoid Valves are made in such a wide range of types and sizes as to cover practically every industrial requirement.



**Automatic Switch Co.**

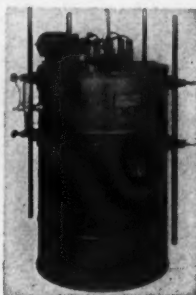
47 EAST 11 STREET, NEW YORK, N. Y.

When inquiring specify CP8401 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Temperature Control Cabinets

*Electrically heated cabinets and constant temperature baths for explosion-proof service*



CONTROL BATH

pressures which may develop. Entire electrical circuit, including heaters, thermostat and control switches disconnected when door is opened. Wiring in conformity with Class 1, Group D requirements. Illustrated is temperature control bath available for reduced or elevated temperatures in variety of sizes and operating characteristics.

PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago, Ill.

When inquiring specify CP8402 — see information request blank, pgs. 2-3

### BOB UPANDOWN SAYS:

*You'll see all the advantages of the Rotameter portrayed in an entertaining, instructive fashion in the new F. & P. Catalog 10-B ... "A NEW ERA IN FLOW RATE MEASUREMENT."*

*Sent free gladly, upon your request*

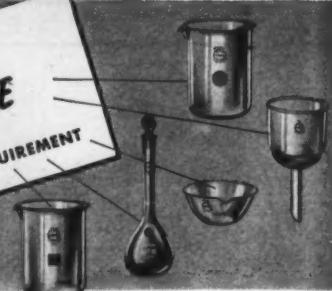
by

**FISCHER & PORTER CO.**

4501 County Line Road • Hatboro, Pa.

When inquiring specify CP8403 — see information request blank, pgs. 2-3

**5 LINES OF GLASSWARE**  
TO MEET EVERY LABORATORY REQUIREMENT



**1. Pyrex brand Laboratory Glassware**  
*The All-Around Ware For All-Around Use*  
Fabricated from "Pyrex" Chemical Glass No. 774—"Pyrex" Ware combines the essential properties of chemical stability, mechanical strength and heat resistance, scientifically balanced—the standard glassware for general laboratory use.

**2. Pyrex brand Lifetime Red Low Actinic Glassware for Light-Sensitive Substances**  
This colored glassware affords high protective value. Fabricated from "Pyrex" Chemical Glass No. 774, its LIFETIME RED color is an integral part of the glass. Mechanical strength, chemical stability and heat resistance are combined with ability to retard deterioration from light influence.

The following data will serve as a guide to its efficiency:

Approximate percent wave-length transmission in Angstrom units of "Pyrex" Low Actinic Ware	3000 Angstroms 0%
	4000 Angstroms 1%
	5000 Angstroms 4%
	6000 Angstroms 12%

**3. Pyrex brand Fritted Ware For Speed, Retentivity and Freedom From Chemical Reaction**  
Glass particles are fritted to form discs which are sealed into non-porous bodies—both of "Pyrex" Chemical Glass No. 774. With five porosities available—from ultra fine to extra coarse—filtration of various types of precipitates can be accomplished at maximum speed. Discs are mechanically strong, thermally and chemically resistant.

**4. Vycor brand Glassware For High Temperature Reactions, Rapid Analysis**  
Fabricated from 96% Silica Glass No. 790, this ware possesses exceptional chemical stability, has a high softening point and extremely low coefficient of expansion.

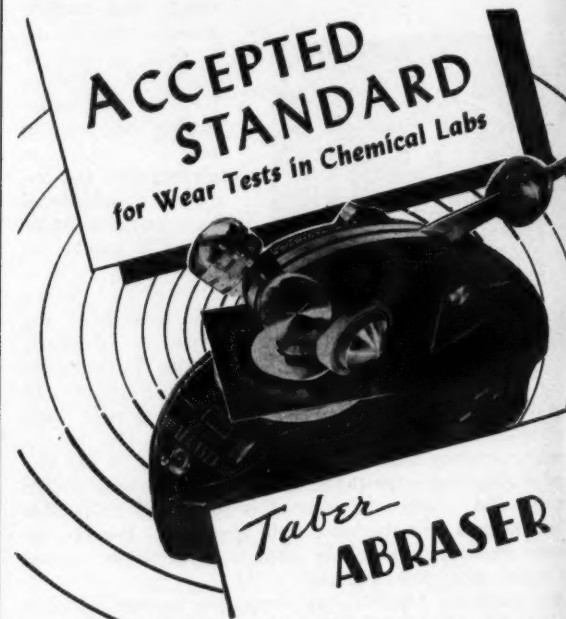
**5. Corning brand Alkali-Resistant Glassware for Boron Determinations and Similar Applications**  
Designed specifically for use where resistance to alkalis is important. Fabricated from "Corning" Alkali-Resistant Glass No. 728—substantially boron-free (approx. B<sub>2</sub>O<sub>3</sub> Content, 0.06%).

For complete information consult Catalog LP21 and Supplements.

**CORNING GLASS WORKS • CORNING, N. Y.**

When inquiring specify CP8404 — see information request blank, pgs. 2-3

**ACCEPTED STANDARD**  
for Wear Tests in Chemical Labs



**Taber ABRASER**

● The Taber Abraser provides the required standard, constant tests to accurately compare and evaluate wear qualities of surface finishes and fabrics. Scientific wearing action by two rotating "Calibrase" wheels against a 4" specimen mounted on revolving turntable, is recorded in terms of "wear cycles" on built-in counter. Use the Taber Abraser as your standard for wear tests. Write for Bulletin 4012 NOW.

**TABER INSTRUMENT CORPORATION**

111CP GOUNDRY STREET, NORTH TONAWANDA, N. Y.

Designers and Builders of Scientific and Precision Apparatus

When inquiring specify CP8405 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS

### How to Keep Flowmeters Accurate

Eight page manual tells how to install flowmeters and keep them accurate, explaining the causes of errors in meter reading, discussing mistakes in computing primary element, mistakes in locating primary element as well as in installing and maintaining it. Correct methods of making pressure taps are also outlined as are other important steps. Numerous diagrams clarify the text. Bulletin 28 — How To Keep Flowmeters Accurate on request.

COCHRANE CORP., Dept. CP, 17th & Allegheny Aves., Philadelphia, Pa.

When inquiring specify CP8406 — see information request blank, pgs. 2-3

### Laboratory Combustion-Tube Furnace

*Carbon and sulphur determination as well as gravimetric determination of carbon and all alloy steels; operating temperatures to 2650° F*

**Uses** — For fast and modern method of carbon and sulphur determinations as well as gravimetric determination of carbon and all alloy steels including stainless and heat resisting steels.

**Features** — All necessary controls conveniently located on face of furnace.

**Description** — Model illustrated (CF-1), a single tube furnace — temperatures obtainable for continuous operation are up to 2500° F while for occasional operations tem-



**SINGLE TUBE FURNACE** . . rubber tubing adapters located at both ends of housing for convenient piping to oxygen supply

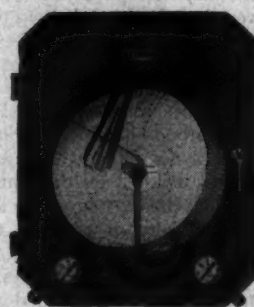
peratures up to 2650° F are permissible. High temperature globar elements are easily installed or removed without total dismantling and assembling of unit. Temperature regulation is provided by coarse and fine adjustment knobs connected to a variable built-in voltage transformer. An ammeter shows the proper and safe current required for the Globar heating elements while temperature is indicated by a pyrometer which is connected to a platinum thermocouple. A knob for controlling flow of oxygen operates a needle valve connected to rubber tubing adapters located at both ends of housing for convenient piping to oxygen supply. A line cut-off switch and a signal light which shows when furnace is operating, are both included with the control. Units are equipped with 3 adapters for easy and quick interchangeability or standard combustion tubes, 1 in., 1 1/4 in. and 1 1/2 in. OD. A fourth tube, 2 in. OD can be used without an adapter. Furnaces are built for operation using 60 cycle AC current at 110 or 220 v. Units to operate at 25 cycle current can also be supplied. Overall dimensions are 17 1/2 in. long, 15 in. wide, 21 1/2 in. high.

LINDBERG ENG'G. CO., Dept. CP, 2444 W. Hubbard St., Chicago, 12, Ill.

When inquiring specify CP8407 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

# FOR SALE



## Taylor Fulscope Controllers

**PROMPT DELIVERY - WE'RE READY!**

**THIS** is no post-war pipe-dream. We can assure normal delivery schedules *right now!*

In spite of—or more correctly because of—the fact that Taylor has been one of the main suppliers of instruments for high octane gasoline, synthetic rubber, butadiene, styrene, toluene, and alcohol, our production is now in high gear and *we are ready for new orders!*

Do you need Taylor Instruments for alkylation? Cat cracking? Isomerization? Dehydrogenation? Or other similar continuous processes? *We can supply them!*

Ask your Taylor Field Engineer **NOW** for the instruments that have been tried and proven in all these processes—the instruments that mean "Accuracy First!" Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording, and controlling temperatures, pressure, humidity, flow, and liquid level.*

★ KEEP ON BUYING U.S. WAR BONDS AND STAMPS ★

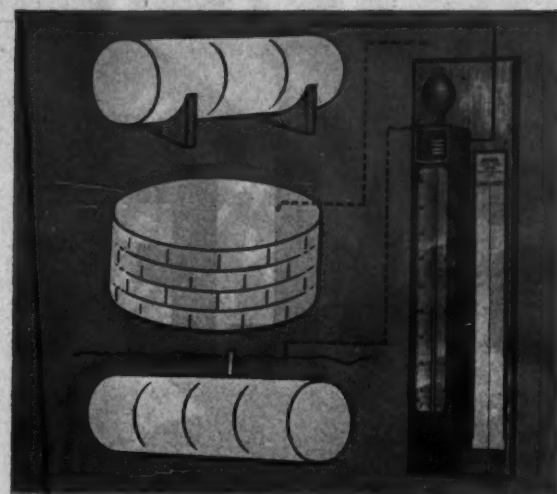
### TAYLOR REPAIR SERVICE

We can now give the same prompt service as on new instruments. We have complete repair facilities at Rochester, Tulsa, and San Francisco, also in Toronto.



IN HOME AND INDUSTRY

When inquiring specify CP8408 . . . see information request blank, pgs. 2-3



LOCATE LIQUID LEVELS  
QUICKLY  
WITH **MERIAM**  
TANK LIQUID LEVEL GAUGES

With these accurate gauges you can determine the liquid level of oil, water or any other liquid in large or small tanks — vented or under pressure — on the ground, underground, or overhead.

These gauges are the distant reading type and can be located at any convenient point, such as a superintendent's office.

They are substantially built — no levers, gears, or diaphragms — and require practically no maintenance. Furnished complete with all accessories. Ask for Bulletin 20.

#### THE MERIAM COMPANY

1989 W. 112th St. Cleveland 2, Ohio

**MERIAM**  
SINCE 1911

MANOMETERS, METERS AND GAUGES FOR THE ACCURATE MEASUREMENT  
OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

When inquiring specify CP8409 — see information request blank, pgs. 2-3

## INSTRUMENTS

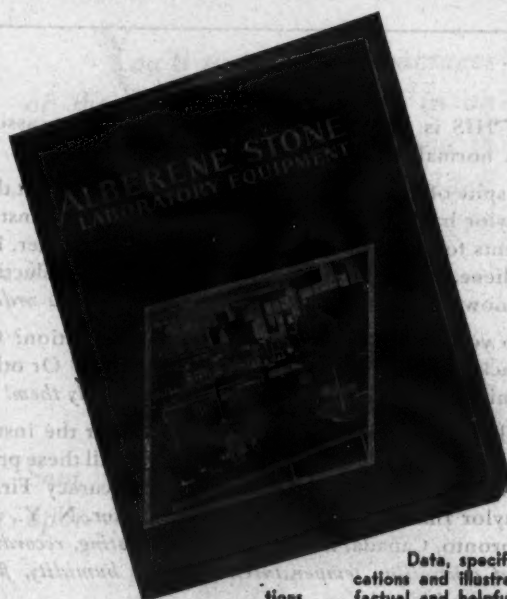
### Welded Pressure Vessels For Research, Pilot Plant Use

*Designed especially for storage of compressed gases at pressures up to 6000 lbs. per sq. in.*

**Uses** — For high pressure use, particularly in research and pilot plant work. Designed especially for the storage of compressed gases at pressures up to 6000 lbs. per sq. in., (up to 8000 lbs. per sq. in. under certain conditions.) Used in inverted position, standard vessels are equally well suited for small liquid pressure accumulator service (if appreciable sediment is not present) for the same pressure range. Standard units may be used as high pressure soaking drums or reaction vessels only if it is known that corrosion will not take place and that solids will not settle out within the cylinder. In certain instances they may be used for separation of gases and liquids.

**Description** — Since they are of welded construction and made of low carbon steel, with both ends closed, the standard units are not intended for service at high or very low temperatures, neither are they intended for containing liquids under high pressure in which solids may be present, owing to the difficulty of cleaning the interior. Special units can be supplied with removable ends of the following forms: (1) compressed head closures as in standard super pressure bombs; (2) welded flanged ends of the high pressure piping type; (3) Aminco flanged necks. The vessels are available in the following standard sizes: 2 and 4 liters, and 1/4, 1/2, 3/8, 3/4, 1, 1 1/4 cu. ft. They are fabricated from the desired lengths of seamless tubing (either 4 1/2 in. out-

### SEND FOR THIS NEW CATALOG!



Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

**ALBERENE STONE CORP. OF VIRGINIA**  
419 4th Avenue, New York

When inquiring specify CP8410 — see information request blank, pgs. 2-3

## POWERS

INDICATING  
and  
RECORDING THERMOMETERS

Some of the many different types of Dial Indicating and Recording Thermometers we make are shown here. We also make Recording Regulators and Regulators combined with easy to read Indicating Thermometers. Write for Bulletin. Specify type of instrument in which you are interested.

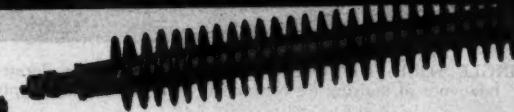
**THE POWERS REGULATOR CO.**  
2756 Greenview Ave., CHICAGO

Offices in 47 Cities—See your phone directory

**50 Years** of Temperature and  
★ Humidity Control ★

When inquiring specify CP8411 — see information request blank, pgs. 2-3

### WHY G-E FIN CALROD HEATERS HAVE LONG LIFE...



**THE FAMOUS G-E CALROD CONSTRUCTION** insures long life of the heater element. In addition, the heavy fin, extending along the complete length of the Calrod, is brazed in place for further assurance of long life in service.

The G-E Fin Calrod — the complete assembly — receives a heat-resisting finish — also resistant to rust. We can bend them at the factory to suit your needs. Orders should be accompanied by a sketch showing the formation desired, with possible limits of variation.

**WHENEVER AND WHEREVER YOU NEED A WARM AIR FLOW**, consider the G-E Fin Calrod heater. Especially suited to air-blast heating applications — such as air ducts with forced-air draft, blower-type electric unit heaters, and industrial processes requiring heated air blasts.

**FOR COMPLETE INFORMATION**, including prices and application data, write for Bulletin GEA-2618B. General Electric, Schenectady, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP8412 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS

side diameter by 3 in. inside diameter, or 7 in. outside diameter by 5 inches inside diameter) to which is welded at each end a cap machined from a solid bar of steel. Two openings are provided in the top for standard Aminco 9/16 in. outside diameter tubing and the necessary union type fittings are supplied. Where it is desired to connect with 1/4 in. superpressure tubing, bushings may be supplied. The contents of the vessel are drained through a 1/4 in. union drain plug of special design (which functions as a valve) located on the side of the vessel near the bottom, allowing the vessel to be mounted directly on a solid foundation. Both top and bottom ends are flat to facilitate mounting in various positions. Four sturdy feet are welded to the lower end in proper alignment with the top openings and with the drain to facilitate the use of the vessel when bolted to the floor or attached to a supporting frame. Finished in durable gray enamel and shipped on skids.

AMERICAN INSTRUMENT CO., Dept. CP, Silver Springs, Md.

When inquiring specify CP8413 — see information request blank, pgs. 2-3

## Electronic Control Regulates Boiler Feedwater Automatically

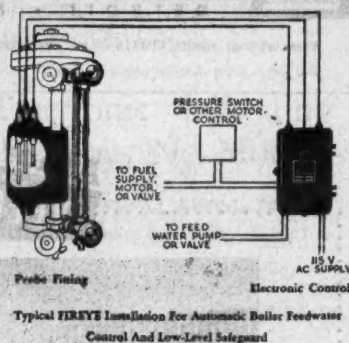
Supplied as standard for boiler pressures to 300 pounds; 115 or 230 v., AC, 60 cycles

Uses — For maintaining constant boiler water levels automatically and for guarding against low water hazards. (Types are also available for automatic pump control only or for low level protection only.)

Description — For automatic feedwater pump control and low-water protection, this particular type (P156N) is used with a probe fitting (H53) as shown in the illustration. The probe fitting may be mounted parallel to the water column, or directly on the boiler, and is wired to the electronic control. Three probes within this Type H53 mark boiler feedwater pump on and off levels and a low water danger point. The top and middle probes determine the high and low levels at which the boiler feed water pump is turned on or off to maintain constant water level. Photoelectric control (Fir-eye) closes the electric circuit controlling the pump and water feeds into the boiler. The lowest probe defines the danger point below which the boiler water must not fall. Should water drop below this safety probe control immediately shuts off fuel and sounds alarm. The controls are supplied as standard for boiler pressures to 300 pounds and for operation from a supply of 115 or 230 volts, 60 cycles. The equipment governs solenoid valves, small horsepower pump motors or pump motor magnetic starters. The probe housing is furnished in either cast or malleable iron and the electronic control in a weather proof pressed steel housing.

COMBUSTION CONTROL CORP., Dept. CP, 77 Broadway, Cambridge, 42, Mass.

When inquiring specify CP8414 — see information request blank, pgs. 2-3



Typical FIREYE Installation For Automatic Boiler Feedwater Control And Low-Level Safeguard

### WATER LEVEL CONTROL



## Sargent RADIANT HEATING OVEN

Although principally designed to provide an inexpensive unit for quick and convenient drying of electrodes in connection with the determination of lead as lead dioxide, this infra red drying oven has a wide variety of other applications. For example, it is excellently suited for such operations as evaporating, drying precipitates, paraffin melting, drying solids, etc. Drying efficiency is well illustrated by the fact that lead dioxide is thoroughly dried in one to two minutes.

The oven consists of a cylindrical case containing a General Electric R-40, 250 watt drying lamp with self reflector, a hinged, chromium plated, hemispherical dome, a chromium plated perforated shelf and an on-off switch mounted on the case. The reflector contained within the drying lamp reflects the radiant heat upward thus directing all energy to the working area of the oven. Further concentration of heat is accomplished by the chromium plated dome which acts as a highly effective heat reflector so reducing to a minimum heat loss by radiation. By means of this design a maximum temperature of approximately 500° F is developed within ten minutes. The fast upward flow of air provided by the open bottom and vent hole in dome also contributes greatly to the high drying rate of this oven. Average service life of the infra red drying lamp is 5000 hours.

Overall dimensions: height, 13 1/2 inches; diameter, 6 1/2 inches. Inside dimensions: height from top of perforated shelf to top of dome, 5 1/4 inches; diameter, 5 3/8 inches. Electrodes having a total height exceeding 5 1/4 inches can be placed in the oven by permitting the electrode stems to project out of the vent hole in the dome.

S-44050 Sargent Infra Red Drying Oven—Complete with General Electric R-40, 250 watt drying lamp, perforated shelf and cord and plug. For operation from standard 115 volt A.C. or D.C. circuits.....\$18.00

S-44200 Infra Red Drying Lamp only, with Self Reflector, General Electric R-40, 250 watt. Each.....\$1.75

### E. H. SARGENT & COMPANY

155-165 East Superior Street, Chicago, Illinois

Michigan Division: 1939 East Jefferson, Detroit, Michigan

# S A R G E N T

## SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP8415 — see information request blank, pgs. 2-3

# The Fluidometer

**Automatic  
LIQUID  
METERING  
SYSTEM**

**For Batching  
Liquids  
Accurately**



● The Fluidometer System is a simple, dependable, completely non-manual metering system for batching light or heavy liquids. With the Fluidometer, human attention and human judgment are eliminated. The precisely calibrated mechanism automatically delivers the predetermined quantity—then automatically resets for the next delivery. Adaptable to either hot or cold materials. Accuracy proved in laboratory tests and in actual operation. Write for descriptive literature.

**HETHERINGTON & BERNER, Inc.**  
711 Kentucky Avenue • Indianapolis, Indiana

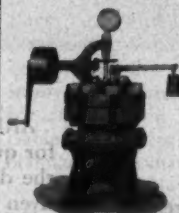
**Hetherington & Berner**

When inquiring specify CP8416 — see information request blank, pgs. 2-3

## INSTRUMENTS

### One Gallon Autoclave For Use In Laboratory And Production

*Research applications; also experimental impregnation of wood, fibrous materials, metals; in production of rare chemicals, pharmaceuticals*



**JACKETED  
AUTOCLAVE**

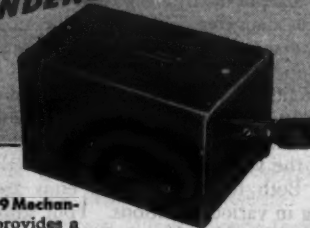
**Uses** — In industrial and research laboratories and for regular production in connection with rare chemicals and pharmaceuticals. As stirrer may be easily removed the autoclave may be used as a high pressure impregnator for the experimental impregnation of wood, fibrous or porous materials, metals such as magnesium, powdered metal parts, etc.

**Features** — Machine combines in its design, construction and equipment the functions and features of large high pressure autoclaves, sulphonators, nitrators, chlorinators and similar equipment. Body may be fitted with a one piece pressure jacket or steel direct gas firing stand. These are interchangeable and when both are included the scope of service is correspondingly increased.

**Description** — The one gallon autoclave consists of a body or pot cast of a special mixture of charcoal iron as ordinary cast iron lacks density necessary for high temperature and pressure operation. Special mixture also provides corrosion resistance. Body is six inches diameter and nine and one half inches deep. When full the capacity is about 1.15 (U. S.) gallons. The bottom is hemi-

## Mechanical Alternator FOR CONDENSATE PUMPS

**CLASS  
9049**



The Class 9049 Mechanical Alternator provides a simple and positive means of mechanically alternating the operation of two condensate pumps in a duplex system. The function of the device is to provide alternate cycles of operation to assure even wear of the pumping units in such a system. It thus eliminates the evils of long stand-by for one of the two pumping units. The Class 9049 device further provides the additional function of starting the "second" pump in cases where extra capacity under peak conditions is required.

#### ELECTRICAL RATINGS

Voltage	Single Phase A.C.	Polyphase A.C.	D.C.
110V.	1 H.P.	2 H.P.	3 1/2 H.P.
220V.	2 H.P.	3 H.P.	5 H.P.
550V.	2 H.P.	3 H.P.	5 H.P.
32V.	.....	.....	3 1/2 H.P.

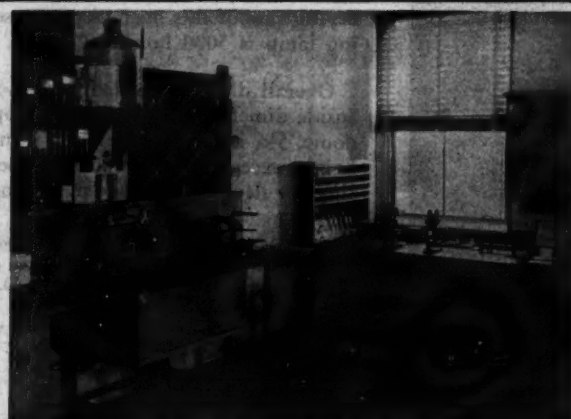


**REGULATOR DIVISION**

**SQUARE D COMPANY**

**DETROIT • MICHIGAN**

When inquiring specify CP8418 — see information request blank, pgs. 2-3



**Plan TODAY for TOMORROW**

Out of today's war effort will come new and better materials, methods, and designs which will dictate the design and construction of laboratory equipment tomorrow. Sheldon, long a leader in producing laboratory, home economics, art and vocational furniture can help you meet the demands of tomorrow if you plan today. Let us discuss your post-war plans with your organization NOW.

**Ask our Planning Engineers to call.**

**E. H. SHELDON & CO.**

730 NIMS STREET MUSKEGON MICHIGAN

When inquiring specify CP8417 — see information request blank, pgs. 2-3

**Alnor  
VELOMETER**



.....★ **all purpose air velocity meter**

Instantaneous, direct readings of air speed measured in feet per minute with the Alnor Velometer give you the quick, accurate information on air movement needed to check operation of blowers, fans, air conditioning installations, and similar equipment. No calculations, no timing, no conversion tables; read velocities direct from the Velometer scale. Extension jets permit accurate readings in many locations that would be completely inaccessible with other means of measurement.

The Velometer is made in several standard ranges from 20 fpm to 6,000 fpm, and up to 3 inches static or total pressure. Special ranges available as low as 10 fpm and up to 25,000 fpm velocity and 20 inches pressure.

Write for Bulletin No. 2448-E.

**Illinois Testing Laboratories, Inc.**

413 NORTH LA SALLE STREET • CHICAGO, ILLINOIS

When inquiring specify CP8419 — see information request blank, pgs. 2-3

**CHEMICAL PREVIEW**



## INSTRUMENTS

spherical shape which the stirrer fits closely. Cast cover is  $1\frac{3}{4}$  ins. thick and contains six openings on cover; pressure gauge, safety valve, thermometer well, stuffing box for stirrer shaft;  $\frac{3}{8}$  threaded opening with removable pipe plug,  $\frac{3}{8}$  flanged opening with removable pipe plug. The latter are for filling and discharging without removing the cover. The body and cover have slotted bolt holes to receive special T-head forged bolts. By loosening the nuts — not removing them from the bolts — the bolts are immediately removable from the slots. The joint between the cover and the body is accurately machined and dovetailed or recessed to prevent any possibility of gasket blowing. Jacket (referred to in feature paragraph) may be heated with steam, hot oil, or other vapor or liquid and may be used for cooling with water, brine, etc. For heating with direct firing stand, gas burner is used, supplied by maker of this equipment if desired. Stirrer is of horse shoe or "U" type and is of cast iron construction. It is attached to stirrer shaft and easily removable. Stirrer shaft is monel metal. Stirrer is rotated through a pair of machine cut bevel gears of 2:1 ratio; that is the stirrer will rotate at one half the speed of pulley shaft. Mechanism may also be rotated with hand crank. V-belt pulley may be supplied instead of flat face pulley. Autoclave stands 28 ins. high to top of the stirrer shaft. Weighs about 300 pounds. Each autoclave is tested to 1000 pounds hydrostatic internal pressure. Jackets are tested to 125 pounds pressure. Autoclave is also specially available in other metals. Complete information on request.

INDUSTRIAL MACHINERY CO., Dept. CP, Bloomfield Bank & Trust Bldg., Bloomfield, N. J.

When inquiring specify CP8420 — see information request blank, pgs. 2-3

## Pneumatic Electronic Indicating Controller Employs No Motor

*No moving parts — continuous action, fastest response, stable at smaller throttling zones*



**Use** — As pneumatic indicating controller.

**Features** — No motor, continuous action, highest sensitivity and adjustment to very low sensitivity, no mechanical connection

**ELECTRONIC CONTROLLER** . . in combination with pneumatic follow-up galvanometer and pneumatic circuit, no flapper, simple load error adjustment, (manual reset).

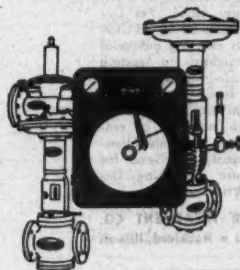
**Description** — The device referred to here is maker's controller (Celectray) with mirror galvanometer and photo-electric amplifier combined with a pneumatic follow-up without losing its featured characteristics. Output air is precisely and stably controlled — throttling control with manual reset or with automatic reset and/or (TAG) quick response. On and off or open and shut control is available in two models, high sensitivity, non-adjustable throttling or on-and-off without throttling. Magnetic air valve which acts as amplifier and converter from electric to pneumatic operation replaces relay used in standard model. Complete information on this device sent on request.

C. J. TAGLIABUE MFG. CO., Dept. CP, 550 Park Ave., Brooklyn, N. Y.

When inquiring specify CP8421 — see information request blank, pgs. 2-3



## The 10,600-mile stretch...



Before the Japs had conquered the East Indies, America's scientists and chemists planted miniature rubber plantations in the United

States by creating synthetic rubber.

From Massachusetts, 10,600 miles away, came Maseoneilan controls which made

possible the processes which have enormously stepped up the production of rubber. American made rubber . . . and prevented the loss of Far East supplies from being a major disaster.

MASONEILAN

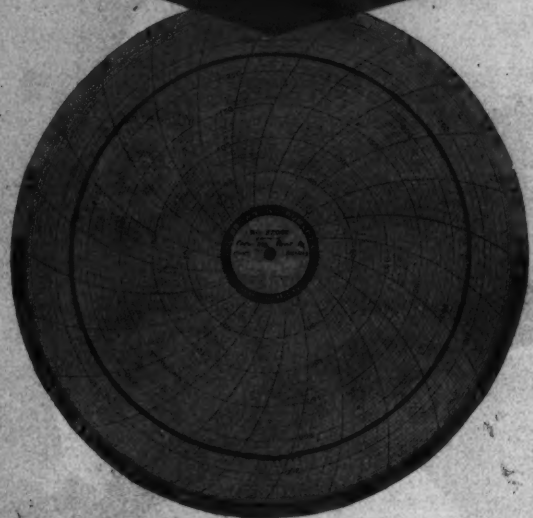
**MASON-NEILAN REGULATOR CO.**

**3197 ADAMS ST., BOSTON, MASS.**

New York Philadelphia Pittsburgh Tulsa Toledo Chicago  
Atlanta St. Louis San Francisco Los Angeles Houston  
Mason Regulator Co. of Canada, Ltd., Montreal, Canada

When inquiring specify CP8422 . . . see information request blank, pgs. 2-3

What's **WRONG**  
with this curve?



it looks too broad — as though the pen had picked up a piece of fuzz — but that's not why it's broad. The answer is, it is actually **SEVEN** curves. Paper is scarce, and each chart, although checked daily, is being used for one week instead of one day.

Still, the curve is flat, with no nicks, and it shows how closely a nine-year-old Foster 38-P6 Pump Governor is regulating discharge pressure on a duplex fuel oil pump, twenty-four hours a day, seven days a week. Furthermore, charts for other weeks tell an identical story, because this governor is the right size and type for the job, and it was properly installed.

Your problem may be different. If it involves pressure or temperature regulation, however, you can be sure that there's a specific Foster Valve to give you equally satisfactory performance, because there's a Foster Valve for every service requirement. And our engineers will be glad to help you get the right valve.

Foster Type 38-P6 Pump Governor installation showing proper by-pass arrangement — for full details see Catalog 70.

Illustrated catalog on the complete Foster line, with many pages of useful engineering data will be sent if the request is made on company letterhead. Simply ask for Catalog 70.

**FOSTER ENGINEERING**  
124 MONROE STREET, NEWARK 1, N. J.

When inquiring specify CP8423 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Electronic Level Control For Use In Extreme Temperature Containers

Regulates level of liquids, electrically conducting solids; indicates level by signal



CONTROL operates solenoids or other devices to regulate level

**Uses** — Maintains or keeps within desired limits level of any liquid or electrically conducting solid within an open or closed tank, bin, hopper or other container. Used effectively in handling chemicals, acids, water, oil, brines and various substances such as metal chips, etc. **Features** — The control itself is non-mechanical and has no moving parts. No chemical or other effect on

liquids or solids being controlled.

**Description** — The instrument indicates the level by signals or can be installed to operate solenoid or motor

### De-Ionized Water REPLACES DISTILLED WATER

★ It costs only a fraction of what distilled water costs! Yet De-Ionized Water, produced by ILLCO-WAY units, meets exacting industrial and technical standards in leading U.S. plants! Actual installations (capacities ranging from 10 gallons to 50,000 gallons an hour) are in daily operation in such industries as synthetic rubber, aircraft, aluminum, chemical, pharmaceutical, etc. Send for complete literature describing De-Ionized Water! Write today!

ILLINOIS WATER TREATMENT CO.  
849 Cedar Street • Rockford, Illinois



When inquiring specify CP8424 — see information request blank, pgs. 2-3

### FILTER Your LIQUIDS WITH **BOWSER FILTERS!**

*A Type*

FOR MANY USES

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BATCH TYPE

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CLOTH BAG TYPE

WIRE GAUZE

PLATE TYPE

GRAVITY TYPE

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TYPE

BACK WASH TYPE

DIATOMACEOUS

EARTH TYPE

There is more to the filtering of liquids than the quality of the filtrate. Flow per hour . . . length of filtering cycles . . . frequency of cleaning . . . operating costs . . . labor . . . and original investment are all factors of prime importance. To gain the advantage of all these factors is the reason so many industries use Bowser Filters. A wide range of pressure filters, diatomaceous earth filters, cloth bag type, automatic self-cleaning filters, batch and continuous type gravity filters in many sizes and for many liquids are at your service. To filter right . . . write Bowser today!

S. F. BOWSER & CO., Inc.  
Fort Wayne, Indiana



LIQUID CONTROL SPECIALISTS SINCE 1885  
METERING • DISPENSING • STORING • LUBRICATING • FILTERING • DISTILLING

When inquiring specify CP8425 — see information request blank, pgs. 2-3

### Is Your **LABORATORY** Ready for the Job?

Now is the time  
to make sure it is  
efficiently equipped

Between now and the coming of peacetime operations, the competitive position of your company may be determined in your own Laboratory! You will find Kewaunee experience, in equipping many of America's most modern and efficient Laboratories, will be invaluable to you. The Kewaunee Cut-Cost System of unit construction assures greater values, quicker deliveries, easier installation and more attractive orderly appearance.

Without extra cost Kewaunee Sales Engineers will relieve you of bothersome details, prevent mistakes and save you money. Address your inquiries to—

**Kewaunee Mfg. Co.**  
LABORATORY FURNITURE EXPERTS

C. G. Campbell, President  
5011 S. Center St., Adrian, Mich.  
Representatives in Principal Cities

When inquiring specify CP8426 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS

driven valves, pumps, lights, bells or other electrical devices. It can be installed in evaporators, freezers, boilers or other containers involving extreme temperatures. Various combinations of single and double electrode installations are available. Detailed information regarding this electronic principle level control as it may be applied to specific requirements on requests.

TRIMOUNT INSTRUMENT CO., Dept. CP, 37 W. Van Buren St., Chicago, 5, Ill.

When inquiring specify CP8427 — see information request blank, pgs. 2-3

### Automatically Controlled Valve Makes Pump Quickly Self-Priming

*Prevents power loss by water by-passing back to suction chamber; has unusually thick vane with rounded inlet edges*

**Uses** — This line of self-priming pumps provide a selection of equipment for wide range of service.

**Features** — Pump impeller has unusually thick vane with rounded inlet edges, permitting the pump to pass stringy materials and fairly large solids.

**Operation** — Design and action of valve arrangement is an important factor in the quick and effective self-priming action. Priming is accomplished as the motion of the water throughout the pump runner and the volute passage carries behind it a slug of air, drawing air in the suction passage through the impeller and out through the priming chamber. This hydraulic action lifts the column of water in the suction line and achieves the same results as would a separate vacuum pump. The priming valve closes slowly during this process, acting against a spring tension which governs the rate of priming and the static height of the priming suction lift. The automatic closing of the valve after complete priming prevents water from bypassing back to the suction chamber, with result of power loss.

**Description** — Two and three inch sizes now available in



SELF-PRIMING PUMP VALVE . . . automatically controlled

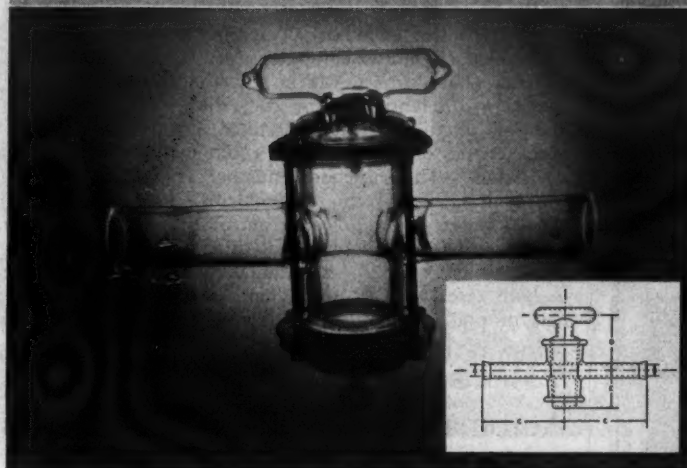
line which will soon be available in 1 to 6 inch models ranging from a very small capacity to 1400 gallons per minute and up to heads of 100 feet or over. The self-priming device incorporated in these pumps is also adaptable to other pumps, particularly the single suction type. Full particulars on these Type AO pumps available upon request.

ALLIS-CHALMERS MFG. CO., Dept. CP, Milwaukee, Wis.

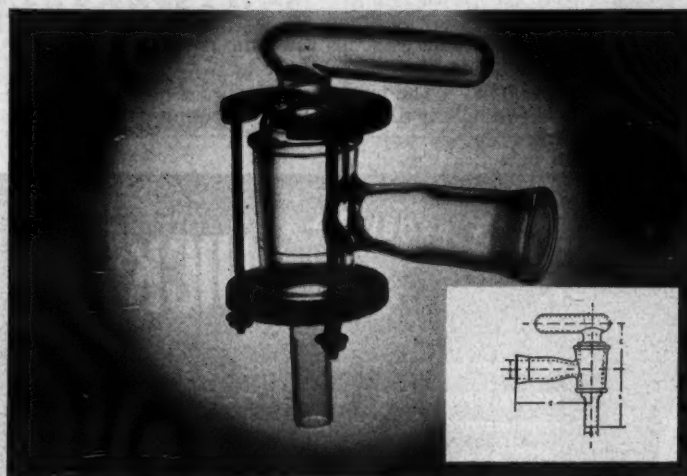
When inquiring specify CP8428 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

# How to use valves in Pyrex pipe lines



Pyrex plug type valve available in 1" and 1½" sizes. Used as standard flange, glass pipe fittings.



Pyrex spigot type valve for use in 1" line, designed primarily for use as terminal outlets.

## VALVE SPECIFICATIONS

SIZE	STYLE	NORMAL DIMENSIONS				
		A	B	C	D	E
1"	Spigot	1"	3½"	4½"	2 1/8"	3 1/4"
1"	Plug, Straight	1"	1"	7"	4 3/4"	3 1/4"
1½"	Plug, Straight	1½"	1½"	7"	4 3/4"	3 1/4"

"PYREX" is a registered trade-mark and indicates manufacture by Corning Glass Works, Corning, N. Y.

**CORNING**  
Glass Works  
Corning, New York

**Pyrex Industrial Glass**

The use of PYREX Piping is in no way limited by inability to insert valves in the lines. PYREX brand Glass Valves are available in 1" and 1½" sizes. When valves are needed for the 2", 3", and 4" lines, standard adaptor fittings are available to connect PYREX Piping directly to valves made of the following materials:

STEEL	PORCELAIN
CAST IRON	GLASS-LINED METAL
LEAD	HARD RUBBER
STAINLESS	RUBBER-LINED METAL

PYREX brand Glass Valves are ideally suited for use in 1" and 1½" lines. They are particularly qualified to handle dilute mineral acids, pharmaceutical preparations and distilled water. Like Pyrex Piping, they have the advantages of remarkable chemical stability, resistance to thermal shock, and transparency which reveals the contents at all times.

Consequently, you need not do without the advantages of PYREX Piping because valves present a problem. Corning engineers will gladly assist you in selecting the proper valve and installing them. Write to Industrial Division, Dept. CP2 Corning Glass Works, Corning, N. Y.

Corning Glass Works, Industrial Division, Dept. CP2  
Corning, New York

Gentlemen:

I would like glass piping information immediately on the subject I have checked below. I understand there is no obligation.

☐ Valves ☐ Installation Manual  
☐ Pyrex Piping and Heat Exchangers ☐ Adaptors

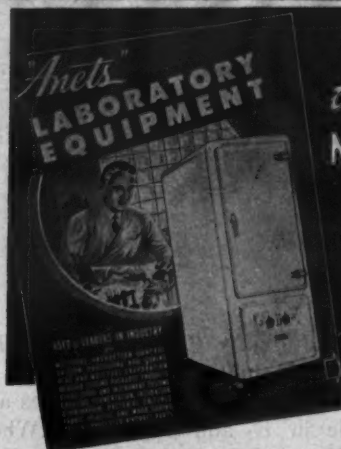
Name.....

Firm.....

Street.....

City and State.....

When inquiring specify CP8429 . . . see information request blank, pgs. 2-3



Just off  
the press...  
**NEW CIRCULAR**  
describing  
**TEMPERATURE**  
and  
**HUMIDITY**  
**CONTROL**

**PRECISION CONTROL**  
Speeds Production

★ Learn how leading manufacturers guard quality and control close tolerance work to AN specifications. Let us help you solve your problems of temperature and humidity control. Any size cabinet or complete room conditioned to your specifications. Write for bulletin No. 170 today. Check a few of the many uses listed below:

- ★ Testing electrical equipment.
- ★ Processing wood, fabric, plastics.
- ★ Varied radio and instrument testing.
- ★ Moisture absorption control. Curing.

**ANETSBERGER BROS.** 3320 Elston Ave.  
Chicago, Illinois

When inquiring specify CP8480 — see information request blank, pgs. 2-3



**INSTRUMENTS**

**Temperature Switches And Maintenance of Total Differential within Close Limits**

A discussion of various factors in the application of temperature control switches — sensitivity, differential lag and overshoot, heat balance etc. are discussed in a special bulletin (Number 9) which points out that the actual operating differential in any controlled product, depends not only upon the switch but to an equal extent on the characteristics of the heating or cooling means actuated by the switch. The subsequent number (No. 10) discusses two typical thermal control problems — control of circulated water within 1 F and controlling oven temperature (coil type heater in which total differential was too great about 10 F). Details of installation and revisions made in both cases together with charts and drawings provide data of practical help in such cases.

FENEWAL INC., Dept. CP, 301 Main St., Ashland, Mass.

When inquiring specify CP8482 — see information request blank, pgs. 2-3

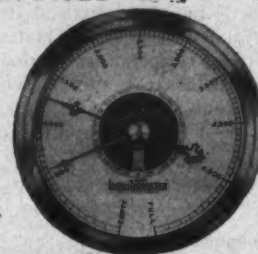
**Automatic Pipettes — Quantities  
5 cc — 100 cc With Proper Flask**

*Contents let into beaker by raising plunger lever with thumb; chamber receives predetermined volume*

*Uses — Battery reactions are said to be made faster and more accurately with this automatic pipette than generally possible with conventional types.*

*Operation — The measuring chamber is filled (slightly to overflowing) by tilting the flask to pouring position. When*

**THOSE WHO CAN'T AFFORD TO MAKE  
ERRORS IN MEASURING VALUABLE  
STORED LIQUIDS CHOOSE —**



**LIQUIDOMETER Tank Gauges**

"THEY'RE ALWAYS DEPENDABLE"

100% automatic.

No pumps, valves, or auxiliary units needed to read them.

Models available for either remote or direct readings.

Accuracy unaffected by specific gravity of tank liquid.

Approved by Underwriters' Laboratories for gauging hazardous liquids.

Write for complete details.

THE **LIQUIDOMETER** CORP.  
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP8483 — see information request blank, pgs. 2-3

**SOLVE YOUR LABORATORY EQUIPMENT PROBLEMS QUICKLY**



To further facilitate the efficient productivity of your laboratory, have the right answer to your every equipment requirement at hand. The "Steelab" catalogue and manual SHOWS you graphically, specialized units to meet the most detailed requirements. ON TIME DELIVERY to enable you to meet important schedules!

224 pages with over 1000 illustrations  
thoroughly designed, practical, and  
laboratory equipment in your planning.



**LABORATORY FURNITURE COMPANY, INC.**  
37-22 NORTHERN BLVD., LONG ISLAND CITY, 1, N.Y.

When inquiring specify CP8431 . . . see information request blank, pgs. 2-3

**SAVE MAN-HOURS  
INCREASE OUTPUT**

*by automatic timing of*  
**MOTORS Control start-  
ing, stopping, running  
and sequence.**

**ALARMS** Bells, lights or  
horns signal critical periods.

**VALVES** Actuate motorized  
or solenoid valves  
exactly on time.



"Vernier-Set" Timer, extremely accurate,  
easily installed, requires no lubrication. Telechron  
motor-operated, SPDT contact action, resetting  
or non-resetting upon power interruption. Dial  
from 0-15 sec. to 0-60 hrs., timed period set  
easily with knob. Operates from 110 or 220 V.  
AC; large silver contacts carry 25 amps. at  
110 V., AC or 1 amp. at 110 V., DC. Thousands  
now serving industry dependably.

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FOR FREE DATA

Send me free copy of Catalog 810 giving detail data on your  
"Vernier-Set" Timers, and let me have more information concerning  
their application to the following items which I've checked (✓).

- ☐ MOTORS Name.....  
☐ ALARMS & SIGNALS Firm.....  
☐ VALVES Address.....

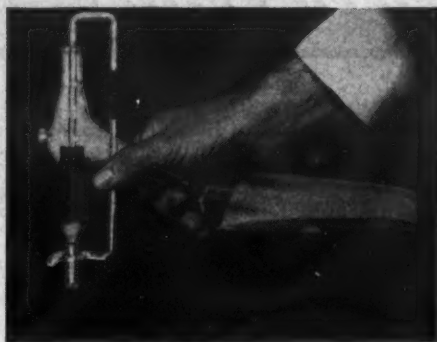
CP **atc Industrial Controls**  
AUTOMATIC TEMPERATURE  
CONTROL COMPANY, INC.  
34 E. LOCAN STREET, PHILA. 44, PA.

When inquiring specify CP8484 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS



PIPETTE fills measuring chamber

flask is returned to vertical, the surplus drains back, leaving the chamber with exactly the predetermined volume. Its contents is let into the beaker by raising the plunger lever with thumb (see illustration) or by engaging the ring hook with the far rim of the beaker and pressing downwards. Dispenser assemblies may be had for pipetted quantities from 5 to 100 cc, each dispenser operating with flasks holding 250, 500, 1000, or 2000 cc. Special combinations are also available. The automatic pipette carries catalog number 850.

MACALASTER BICKNELL CO., Dept. CP, New Haven, Conn.

When inquiring specify CP8435 — see information request blank, pgs. 2-3

## Simplified Electron Microscopes

*Small quantity being produced — available on high priority to industrial laboratories*

**Uses** — Available on high priority for industrial uses.

**Features** — The design of this electron microscope is unique in that it employs electrostatic lens which do not require accurate voltage regulation.

**Description** — Component parts of the microscope are the same as those announced a year ago when a war model was demonstrated at the National Chemical Exposition at Chicago. The new instruments are now housed in a desk design for convenience of operation. These microscopes operate on ordinary house current, are capable of producing images 10,000 times the size of the specimen and are approximately ten times more powerful than the best light microscope.

GENERAL ELECTRIC CO., Dept. CP, (Electronics Dept.), 6 State St., Schenectady, N. Y.

When inquiring specify CP8436 — see information request blank, pgs. 2-3

## Concrete Floor Patch

*Impervious to acids, alkalis, withstands heavy trucking, ready for use in 8 hours*

**Uses** — For repairing and resurfacing holes, ruts, breaks and irregularities in industrial concrete floors.

**Description** — Compounded material impervious to effects of lactic acids (and others), strong alkalis, oils and greases. Withstands heavy trucking. Dry form made into paste by addition of water. Applied in thickness of from 1/2 in. to practically any required depth. Ready for traffic in 8 hrs.

AGATEX CORPORATION, Dept. CP, 1170 B'day, New York, 1, N. Y.

When inquiring specify CP8437 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



*Why the*  
**CASH STANDARD**  
*Streamlined*  
**PRESSURE**  
**REDUCING VALVE**  
 TYPE 1000

**.... DOESN'T BECOME GUMMED UP FROM DIRT-SCALE AND VISCIOUS MATTER..**

• There are no complicated inside works in the "1000" valve. As a matter of fact there is only the one vital moving part — the seat piston. There are no restricted passages, no small ports, no aggregation of close fits. It's streamlined all of the way.

Available in sizes 1/4" to 2".  
 Each size with expanded outlet if desired.

## PERFORMANCE RESULTS FROM Streamlined Flow

1. Maximum Capacity when needed most
2. Accurate Pressure Control under toughest working conditions
3. Trouble-free Service
4. Smooth Operation
5. Tight Closure
6. Accurate Regulation
7. Speedier Production Results
8. Elimination of failures
9. Constant Delivery Pressure
10. Cost Saving Operation
11. No Spoilage
12. Practically zero in maintenance costs

Write for Bulletin "1000" which gives details on the performance of this "Streamlined" 1000 valve and its benefits.

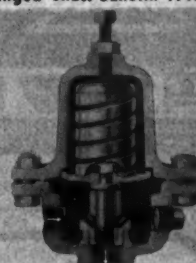
**CASH STANDARD**  
**CONTROLS..**  
**VALVES**

**A. W. CASH COMPANY**  
 DECATUR, ILLINOIS

## OTHER VALVES from the CASH STANDARD LINE



Cash Standard Type 33 Relief Valve; in various metals to handle nearly all fluids. Has Roller guides on valve spindle; also roller bearing to take care of spring torsion. Sizes 1/2" to 3" screwed ends; 1" to 12" flanged ends. Bulletin 971.



Cash Standard Type Q Relief Valve has side inlet, bottom outlet. Popular for pump bypass use. Sizes 1/2" to 2" screwed ends. Relief pressures up to 350 lbs., temperatures up to 500°F. Bulletin 943.



Cash Standard Type 4190 Valve for relief (bypass) use; holds constant valve inlet pressure regardless of changes in load or outlet pressure. Multipoint—large capacity. Iron or bronze bodies; iron or bronze trim. Sizes 1/2" to 2" screwed ends; 2" to 6" flanged ends. Bulletin 952.

## How Streamline Design Works

• Flow has been streamlined for straight flow into the delivery passage and jet. See FIG. 1. The fluid

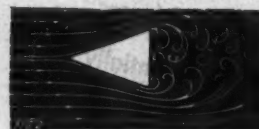
FIG.-1



flows smoothly around this valve with no back eddies to cause turbulence. See FIG. 2, on the downstream side of its trailing edge. In a reducing valve all the pressure drop or work of pressure reduction should occur at one place, namely where the valve throttles flow, and not on the downstream side of the valve. Where you

have downstream turbulence, See FIG. 2, the greatest amount of turbulence with resultant greatest pressure drop will occur when you want maximum flow and therefore want least pressure drop—if the delivery pressure is to be maintained. With

FIG.-2



Streamlined Flow, See FIG. 1, you get maximum capacity, plus close delivery pressure control.

When inquiring specify CP8438 . . . see information request blank, pgs. 2-3



## TANKS • ALKALI AND ACID RESISTANT

Haveg is a plastic that is completely acid or alkali resistant throughout its entire mass. It is not a lining or coating. It is available in standard size tanks; rectangular, cylindrical and horizontal; in standard sizes of pipe, valves, fittings, fume duct and many other types of chemical equipment.

Bulletin F-3 gives complete design, engineering and application data. Send today for your copy.



When inquiring specify CP8438 — see information request blank, pgs. 2-3



## New Materials

### Chemurgic Rubber Can Be Used Alone Or As An Extender

*Developed from vegetable oils: present applications include hose, tubing, wire insulations*

**Uses** — Chemurgic rubber now being used for many essential applications. May be used independently or as an extender blended with natural rubber, reclaim or synthetic rubber. Hose and tubing, wire insulations and gaskets, foot comfort pads, hospital sheeting, jar rings and extruded channels are a few of the present uses.

**Features** — Requires neither critical materials or critical equipment for manufacture. Standard rubber mills and mixers do its mixing and milling. Calendaring, extrusion and vulcanizing are similar to that of crude rubber. Water, alcohol, lubricating oil have little apparent effect.

**Description** — Contains an accelerator of the guanidine type and sufficient sulphur to give cure in 30 minutes at 40 pounds steam pressure (287 F). Necessary vulcanizing already in this chemurgic rubber but it may be loaded or softened as required. Small amount of reclaim added to this compound improves molding, facilitates removal from molds. Softeners may be added to increase tack and give a more homogenous product. Proper compounding with such pigments as carbon black or clay or a combination of both result in higher tensile strength. Tests in-

dicating tensile strength as high as 450 lbs. per sq. in., elongation as high as 150%, shear hardness, 60-65 and a tear of 45-50 pounds per sq. in. obtained through proper compounding.

WISHNICK-TUMPEER INC., Dept. CP, 295 Madison Ave., New York, N. Y.

When inquiring specify CP8441 — see information request blank, pgs. 2-3

### Flexible Coating for Lining Fiber or Paper Containers

*Retains flexibility, resists solvents, easily applied by existing equipment or manually*

**Uses** — Flexible coating for lining fiber or paper containers; sandblast stencil replacing rubber; pressure sensitive adhesive replacing rubber.

**Features** — Great resistance to wide range of solvents; ease of application; continued flexibility under all conditions. **Description** — The product is a rubber-like substance. When dissolved in water, under given circumstances it becomes a liquid, which, when applied to any base material such as fiber, canvas, etc., results in a proven coating which has sufficient continued elasticity to eliminate the danger of future brittleness. As such, it is resistant in full to, such solvents as those used in paint, varnish, and allied products, gasoline, kerosene, naphtha and practically all petroleum products, including fuel oil. It is low cost and

## All the evidence you want!

Eagle High Temperature Super "66" Plastic Insulation can prevent crucial fuel losses... save substantially on installation costs! And it is rust inhibitive!

What's more, these FREE Data Sheets prove it... send for them!

**Yes! These Data-Packed Specification Pages** will give you the full story of a unique and outstanding insulating material — Eagle Super "66" Plastic Insulation — which is suitable for practically any heated equipment operated at temperatures up to 1800° F.

**Springy, resilient balls** of Eagle High Temperature Mineral Wool — honey-combed with thousands of "dead air" cells to provide exceptionally high heat saving efficiency — are the basic ingredients.

**Maximum dry coverage** is provided because Eagle Super "66" has unusually low volumetric shrinkage. Count on an average wet coverage of 61 square feet one inch thick per 100 lbs., and a dry coverage from 50 to 55 square feet.

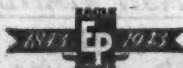
**100% reclaimable** when used at temperatures up to 1200° F., Eagle Super "66" may be removed from equipment, remixed with water, reused.

**Protects against rust** — when properly applied to iron or steel surfaces, Eagle Super "66" helps increase resistance to rust and corrosion.

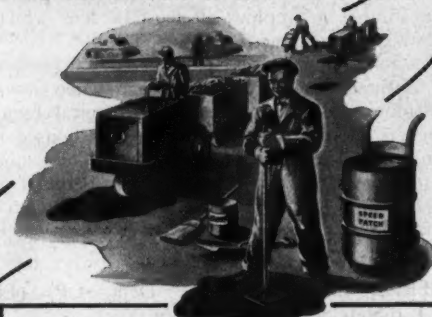
*May we send you these timely data sheets? A post card will bring them!*

**THE EAGLE-PICHER LEAD COMPANY** Cincinnati, O.

Eagle-Picher High Temperature Insulating Materials also include Eagle Insulating Blankets, Eagle Support Blocks, Eagle Loose Wool, Eagle Insulcoat, Eagle Insul-slic, Eagle Finishing Concrete.



## Keep 'Em Rolling



**SPEED PATCH**  
Fixes Factory Floors

INSTANTLY  
... Without Stopping Traffic

Simply fill broken area with ready-mixed Speed Patch and tamp solid. Heaviest loads pass over it immediately. Assures safe, traffic-fast floors.

**ROCK-TRED CORPORATION**  
805 W. WASHINGTON STREET  
MONTROSE 3580 — CHICAGO, ILL.

When inquiring specify CP8442 — see information request blank, pgs. 2-3

When inquiring specify CP8440... see information request blank, pgs. 2-3



## MATERIALS

can be applied with practically any available equipment, mechanical or otherwise. No volatile solvents are present which can evaporate from the product after it has been prepared for application. Subjected to maker's rigid tests and tested by container manufacturers now using it. Product is known as "Neoflex". Further information on request.

GENERAL FINISHES, (Div.-Forman, Ford & Co.) Dept. CP, 111 S. Second St., Minneapolis, Minn.

When inquiring specify CP8443 — see information request blank, pgs. 2-3

## Wax Coatings Protect Thinner Tin On Food Cans To Prevent Spoilage

*Applied by dipping — no adverse effect on end seam compounds; non-flammable, no objectionable odor*

**Uses** — To provide additional protection for the thin tin coatings (approximately one third of pre-war amount) now imposed and aid in preventing spoilage of vital canned foods. Now being used for domestic and overseas pack.

**Features** — May be applied by dip method because the materials in these wax coatings have no deteriorating effect on the end seam compound now used in food cans. Wax coatings create neither fire or health hazards and have no objectionable odor. Labels easily applied to wax coated cans. Fast drying require no special machinery.

**Description** — In clear and olive drab (military use). Both are uniform aqueous emulsions of wax, resins and emulsifying agents. Coverage approximately 3200 No. 2 cans, 2500 No. 2½ cans, 1100 No. 10 cans to one gallon depending on can temperature. In applying coatings by dip method a widely used procedure is to insert a dip tank in the can track or conveyor and allow the can to enter the tank either by gravity or mechanical conveyor. Leaving the tank the cans are drained at a forty-five degree angle and then roll slowly down a drying track or are turned on one end and conveyed and dried on an open belt. The latter handling is generally to be preferred. Automatic equipment for spraying is available and already in use on several installations. Recommendations for either automatic or manual type can be furnished by manufacturers. Where soldered seam or double seam is only area to be coated paint brush, pad transfer or roller may be employed. Complete information on these coatings and their application as they pertain to specific requirements on request.

S. C. JOHNSON & SON, INC., Dept. CP (Industrial Wax Div.) Racine, Wis.

When inquiring specify CP8444 — see information request blank, pgs. 2-3

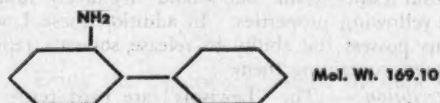


CANS DIPPED BY GRAVITY INTO WAX COATING TANK  
JANUARY - FEBRUARY, 1944

YES, we'll gladly send samples  
of these available, low-priced

## MONSANTO CHEMICALS!

### ortho-AMINODIPHENYL (TECHNICAL)



**Standard Form:** Fused solid.

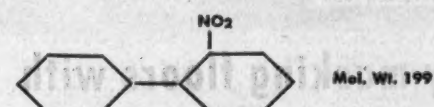
**Specifications:** Purplish crystalline mass; crystallizing point 47.0°C. min.; assay 94.5% min. Distillation range: first drop, 295.0°C. min.; 95% (1-96 ml), 8.0°C. max.; dry point, 310.0°C. max.

**Where ortho-AMINODIPHENYL may be used**

1. Intermediate for chemical synthesis.
2. Intermediate in synthesis of dyestuffs such as quinoline yellows, lithol reds and hydron blues.
3. As a constituent of Phenol Formaldehyde resins.
4. A solvent, where a high molecular weight amine is advantageous.

In addition to their long-established uses, these two low-cost Monsanto Chemicals have vast potential value in new applications and as replacements for materials made scarce by the war. If your company wishes sample quantities of these chemicals, they will be sent promptly upon request by wire or on your company letterhead. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

### ortho-NITRODIPHENYL (TECHNICAL)



**Specifications:** Light yellow to reddish crystalline mass. Crystallizing point 34.5°C. min.

**Where ortho-NITRODIPHENYL may be used**

1. Intermediate for chemical synthesis.
2. In the manufacture of dyestuff intermediates such as 2,2' Diphenyl Ben-zidine and its derivatives.
3. Plasticizer and component in resin compositions.
4. As a component and intermediate in insecticides.

MONSANTO  
CHEMICALS

SERVING INDUSTRY...WHICH SERVES MANKIND



SERVING INDUSTRY...WHICH SERVES MANKIND

When inquiring specify CP8445 . . . see information request blank, pgs. 2-3

# SAVE TIME, COST and MANPOWER



## by masking floors with **DURAMASK**

Paint, grease and oil spillage is no longer a clean-up problem in modern plant operation!

The new **TURCO DURAMASK** floor-masking compound removes the spillage before it is spilled! Just brush it on the floor quickly with a large kalsomine brush. It dries to a hard white surface in approximately 30 minutes, forming a non-skid, non-inflammable protective coat which resists wear and abuse. Then—once each week or at regular clean-up time—wash it off in a jiffy with water, taking all dirt and spillage with it.

**DURAMASK** protects all surfaces against oil, paint, glue, lacquer resins and other inflammable wastes. Because it is non-combustible, it safeguards against fire hazards. It's harmless to personnel, materials and equipment . . . can be applied to planes, cabinets, walls, workbenches or wherever a protective film is needed. If there's a spillage problem in your plant, test a little **DURAMASK** on a small surface. You'll be convinced that it has rendered old cleaning methods obsolete.

BUY MORE WAR BONDS

**Turco**  
PRODUCTS INC.

SPECIALIZED INDUSTRIAL CHEMICAL COMPOUNDS  
MAIN OFFICE & FACTORY: 6135 SO. CENTRAL AVE., LOS ANGELES 1  
SOUTHERN FACTORY: 1606 HENDERSON ST., HOUSTON 19, TEXAS  
CHICAGO OFFICE & FACTORY: 125 WEST 46TH ST., CHICAGO 9, ILL.  
SERVICE MEN AND WAREHOUSE STOCKS IN ALL PRINCIPAL CITIES

When inquiring specify CP8446—see information request blank, pgs. 2-3

## MATERIALS

### "Lewisol" Maleates In Protective Achieve Gloss, Hardness

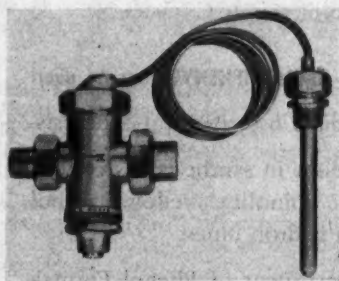
*Hard resins made by modifying rosin esters with maleic alkyd compounds, in common with other hard resins of the rosin ester group*

**Uses** — Primarily intended for compounding with film forming materials, such as cellulose derivatives, or with drying oils to achieve gloss and hardness, and in most cases to improve adhesion. The most important special purposes are (1) Control of viscosity in varnish and other compositions, (2) Control of speed of solvent release, especially from lacquers, (3) Control of after-yellowing in white oleoresinous and lacquer enamels.

**Features** — The manufacturer of these resins points out that the maleic alkyd compounds as used in the Lewisols are of particular merit in achieving the special purposes cited, inasmuch as they affect all three characteristics without compromise in any one of them. Also, that various other modifiers, for example phenol-aldehyde condensates, might be used to give desirable viscosity characteristics to a rosin ester resin, but would negatively influence the non-yellowing properties. In addition these Lewisol type resins possess the ability to release solvents rapidly from lacquers containing them.

**Description** — The "Lewisols" are hard resins made by modifying rosin esters with maleic alkyd compounds in common with other hard resins of the rosin ester group. When used in nitro-cellulose lacquers they have their greatest application in interior finishes — including wood

### Control Liquid Temperatures Within 1 1/2° F. plus or minus



#### STERLING THERMOTROL

FOR LIQUIDS AND PROCESSING (No Priority Needed)

AVOID FUEL WASTE, improve production and processing efficiency NOW, with this Sterling THERMOTROL Liquid and Process Control. Self-contained, self-operated, the Thermotrol maintains accurate temperatures on hot water storage tanks, heat exchangers, process cookers, sterilizers — wherever temperatures depend on carefully modulated flow of steam, water, or gas. Available for pressures up to 125 lbs., temperature ranges to 300° F. Available without priority under L-79 Amendment.

WRITE FOR Bulletin No.  
402 showing wide range  
of applications.

#### STERLING, Inc.

4015 North Oakland Avenue  
Milwaukee 12, Wisconsin

Manufacturers of Heating Pumps . . . Temperature  
Controls . . . Heating Specialties

When inquiring specify CP8447—see information request blank, pgs. 2-3

## 8 reasons why CARBON and GRAPHITE are ideal materials for industrial applications

The Carbon and Graphite and "Karbate" materials manufactured by National Carbon Company possess chemical and physical properties ideally suited for many applications in the chemical and process, petroleum, metallurgical, textile, electrical and mechanical industries. A choice of grades, with or without several processing treatments, will meet specific conditions requiring a combination of properties found exclusively in these materials.

A few of these properties are illustrated on this page. A careful study of these will reveal applications assuring trouble-free operation and low maintenance cost. National Carbon Company engineers will be glad to consult with you on your problems.

The word "Karbate" is a trade-mark of National Carbon Company, Inc.

★ BUY UNITED STATES WAR BONDS ★

### NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

CARBON PRODUCTS DIVISION, CLEVELAND 1, OHIO

General Offices: 30 East 42nd Street, New York 17, N. Y.

Branch Sales Offices: New York, Pittsburgh, Chicago, San Francisco

When inquiring specify CP8448—see information request blank, pgs. 2-3

## X-PANDO PIPE JOINT COMPOUND ACTUALLY STRENGTHENS THE JOINT

Used by U. S.  
Army, U.S. Navy,  
U. S. Army Air  
Corps, U.S. Mari-  
time Commission



Here's a pipe joint compound that **EXPANDS** as it **SETS**—correcting imperfections in faulty threads and flanged faces — strengthening every joint — preventing leaks permanently. Better than litharge and glycerine for all uses. X-Pando (the one formula) holds anything carried in metal pipe except certain heavy acids. Economical. Remember, **one formula** for all uses! Expands and contracts with pipe movement. Resists vibration, deflection, sharp temperature changes, pressures. Withstands deflection — joints sealed with X-PANDO may be easily taken apart. Standard pipe compound in American industry and in the Shipbuilding field.

DISTRIBUTORS  
EVERYWHERE

## X-PANDO CORPORATION

43-15 36th Street · Long Island City, N. Y. · Stillwell 4-7180

When inquiring specify CP8449—see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## MATERIALS

sealers and wood finishes used in furniture industries. (Three Lewisols are identified as Lewisol 2L, Lewisol 28 and Lewisol 33.) Compatibility — These resins are fully compatible with nitro-cellulose and Parlon (chlorinated rubber). They are partially compatible with some types of ethyl cellulose. They are incompatible with cellulose acetate and with hydrocarbon waxes such as paraffin. Solubility — Generally speaking, the Lewisol maleates are soluble in aromatic hydrocarbons, in ketones and esters of solvent and plasticizer type and soluble when heated in drying oils. They are soluble, in, or softened by alcohols. They are insoluble, or only partly soluble, in aliphatic hydrocarbons and in ethers. Technical bulletin (931) contains data on various varnish preparations incorporating these resins are given, citing proportionate compositions, cooking procedure, and the test characteristics of the finished varnish. Lacquer coatings are also discussed. Also results of stability tests on varnishes are tabulated. This literature is available upon request.

HERCULES POWDER CO., Dept. CP, Wilmington, Del.

When inquiring specify CP8450 — see information request blank, pgs. 2-3

### Anti-Fog Goggle Cleaner Removes Dirt, Fingerprints, Stops Mist

*For all glass and plastic surfaces, assures clear vision, non-inflammable*

**Uses** — Designed to clean and prevent fog on lenses and optical instruments, goggles, windows. For glass or plastic surfaces.

**Features** — Non-inflammable, non-explosive.

**Description** — Simple application with soft cloth or cotton batting. Packed in four ounce and thirty-two ounce sizes.

MERIX PHOTO CO., Dept. CP, Wrigley Bldg., Chicago 11, Ill.

When inquiring specify CP8451 — see information request blank, pgs. 2-3

### Capacitor Dielectric Material

*New synthetic product developed to ease growing shortage of high grade mica*



SYNTHETIC DIELECTRIC MATERIAL

**Uses** — Applied to manufacture of most radio-frequency blocking and bypass, fixed capacitors used in communication and other electronic equipment.

**Features** — Greater combination of desirable properties than previously available in any one dielectric material. Use requires little

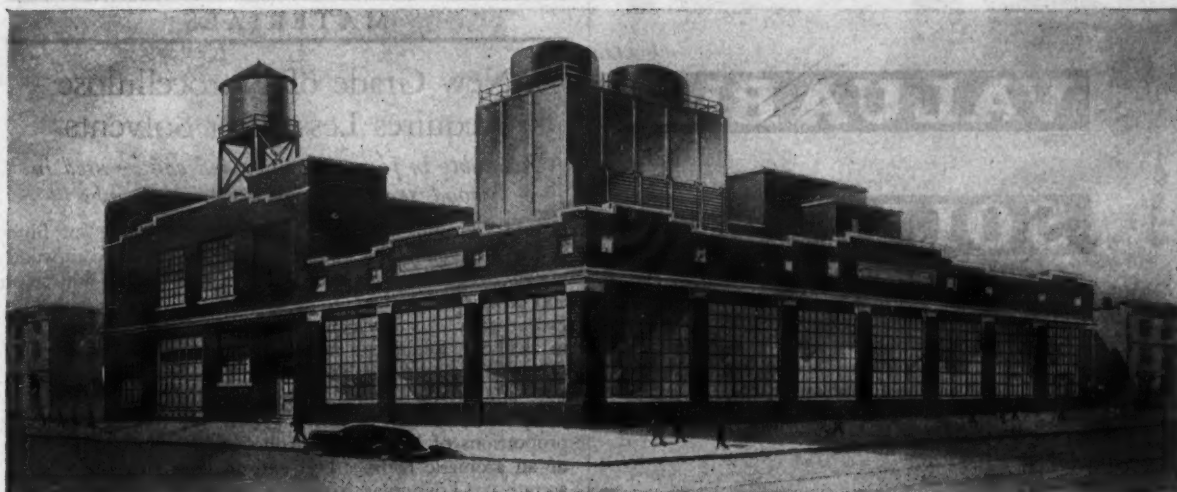
change in equipment or methods of manufacture. Well suited to automatic methods of production.

**Description** — Made of materials available in United States. Available in rolls and sheets. Requires little grading before being placed in capacity production line. Available to manufacturers of capacitors for military use. Known as "Lectrofilm."

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8452 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



PENICILLIN PLANT (now under construction)

## PENICILLIN

Using the experience gained in some forty years of research in the production of chemicals of industrial importance by mycological and fermentative processes, all available members of our research staff have, for more than two years, been devoting their entire energies to the development of methods for the production of Penicillin.

Because of the urgent need for this powerful bacteriostatic agent in the present emergency, we began laboratory production early in 1942. This was increased to a pilot plant scale as soon as possible and in the summer of this year, at the request of the government, we started the construction of an entirely new plant to be devoted exclusively to the large-scale production of Penicillin.

This construction is being rushed with all possible speed, and the plant is expected to

be in operation shortly after the turn of the year.

Since present supplies of Penicillin are far from sufficient to meet the acute needs of our armed forces, the entire output of all manufacturers has been placed under allocation. Although by far the greater part of our output goes directly to the Army and the Navy, limited quantities are allotted by the War Production Board to the Office of Scientific Research and Development for use in essential clinical investigations, but it is not available for general distribution. Even though our new plant will increase our output manifold, we do not anticipate that the supply will be sufficient to allow general civilian use for some time to come. Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y. — 444 W. Grand Ave., Chicago, Ill.

PFIZER  
QUALITY

*Chemicals For Those Who Serve Man's Well-Being*  
*Manufacturing Chemists · Established 1849*

JOIN THE MARCH OF DIMES  
**FIGHT** INFANTILE PARALYSIS  
JANUARY 14-31

When inquiring specify CP8453 — see information request blank, pgs. 2-3

# 3 VALUABLE SOLVENTS

Here are three liquids of similar nature but varying properties. Solvent properties and abilities are so diverse that a great variety of needs are satisfied. If you have a solvent problem that needs improvement, your investigation is warranted.

## 1. FURFURAL

### Typical properties:

Specific gravity (20/20)	1.161
Boiling Range	157-67°C (99%)
Freezing Range	-37°C
Flash Point (open cup)	56°C
Priority Requirements	WPB-M-224

### Uses:

Selective solvent for separation of unsaturates from more saturated components. One of the best known solvents for phenolic resins. Miscible with alcohol, acetone, benzene, butyl acetate, ether, and most organic solvents with the exception of petroleum hydrocarbons and glycerol.

## 2. FURFURYL ALCOHOL

### Typical properties:

Specific gravity (25/25)	1.130
Boiling range	167-77°C (95%)
Freezing Point	-31°C
Flash Point (open cup)	75°C
Priority requirements	None

### Uses:

Solvent for nitrocellulose, dyes, resins, and many organic compounds. Miscible with alcohol, ether, chloroform, castor oil, and other non-paraffinic hydrocarbon solvents. Soluble in water.

## 3. TETRAHYDROFURFURYL ALCOHOL

### Typical properties:

Specific gravity (25/25)	1.052
Boiling range	170-180°C (99%)
Flash Point (open cup)	75-80°C
Refractive Index (25/10)	1.4502
Priority requirements	None

### Uses:

Dispersant for chlorinated rubber, vinyl resin, nitro-cellulose, shellac, rosin, and ester gum. May be mixed with linseed, and blown soya oils, water, and most organic solvents. Excellent dye solvent.

These listings contain just the principle basic properties and uses of these solvents. More information is available and will be gladly furnished on request. Questions regarding your specific problems will be welcome.



**The Quaker Oats Company**

TECHNICAL DIVISION, 11-1

CHICAGO (4) ILLINOIS

FURFURAL - FURFURYL ALCOHOL - HYDROFURAMIDE  
TETRAHYDROFURFURYL ALCOHOL

When inquiring specify CP8454 — see information request blank, pgs. 2-3

## MATERIALS

### New Grade of Nitrocellulose Requires Less Ester Solvents

Available in four viscosities and can be used in wood sealers, lacquers, printing inks

**Uses** — Finding wide application in production of high quality lacquers. Tests indicate that it can be used in wood sealers, wood lacquers, printing inks, heat sealing adhesives and other special uses.

**Features** — This new grade is said to have greater solubility in alcohol. Requires a minimum of ester solvents.

**Description** — Available in four viscosities — 1/4, 1/2, 5/6, and 40/60 seconds. Tests have determined the solubility in a variety of solvent mixtures comprising large proportions of alcohol, or alcohols with minor proportions of an aromatic hydrocarbon and an ester solvent — ethyl acetate. (Triangular diagrams charting these results are available upon request.) It was found that the small amount of ester solvent required to dissolve this grade produced lacquers that will spray effectively under average conditions without blushing, and that they will dry with very little orange peel or other imperfections. The lacquers are said to possess the same properties of standard nitrocellulose lacquers including quick drying, flexibility, toughness, durability and chemical resistance. Identified as Hercules SS Nitrocellulose.

HERCULES POWDER CO., Dept. CP, Wilmington, Del.

When inquiring specify CP8455 — see information request blank, pgs. 2-3

### All Purpose Flux

All purpose soldering flux described in single page bulletin. It is said to have properties of very even flow and ability to penetrate small joints and seams and to act smoothly with Victory solder. Easy to use and described as much less irritating to hands. Ask for "superflux" Bulletin.

PAUL LEWIS LABORATORIES, INC., Dept. CP, 914 No. 4th St., Milwaukee, Wis.

When inquiring specify CP8456 — see information request blank, pgs. 2-3

### Colored Acrylic Molding Powders

Formerly known as "Crystalite" now to have name of Plexiglas; both made from same basic materials

**Uses** — Although primarily used for war goods at present: truck black out, gas mask lenses, fuel and oil gauges, com-



PLEXIGLAS LENSES, RULES, REFLECTORS, GAUGE CUPS



Maurice A. Knight furnishes both standard and special design acid-proof pipe from 1" to 60" bore. There are T's, Y's, sanitary T's, traps and special fittings for unusual installations; pipe with bell and spigot and flange type connections; also plain end pipe with metal flanges.

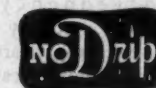
MAURICE A. KNIGHT, 401 Kelly Ave., Akron 9, Ohio



When inquiring specify CP8457 — see information request blank, pgs. 2-3



NO MORE DAMAGE FROM CONDENSATION OR SWEATING PIPES, TANKS, WALLS, CEILINGS AND AIR DUCTS



### A SURE CURE

● This sensational plastic cork coating prevents condensation drip from metal, concrete, brick, wood, plaster or composition surfaces. Permanently protects metal against rust and corrosion, thus prolonging life of pipes, tanks, etc. Forms a moisture-proof, insulation type coating impervious to acid and alkali.

Stucco-like finish requires no maintenance. A gallon covers about 30 feet of 1/2" pipe. Dries in 24 hours. Comes in 1, 5 and 55 gallon drums.

Immediate Shipment. Order from your Supply House.

FREE NoDrip Circular about Condensation Drip and its Prevention.

J. W. MORTELL CO.

Technical Coatings Since 1895

530 BURCH ST., KANKAKEE, ILL.



When inquiring specify CP8458 — see information request blank, pgs. 2-3



## MATERIALS

pass covers, medical instrument pre-war applications included some seventy automotive parts, machine and equipment inspection windows, toilet articles and safety shields.

**Features** — Retain transparency under prolonged exposure and use. Do not warp or craze.

**Description** — Made from same basic raw materials as "Plexiglas" and will in future be known as "Plexiglas Molding Powders" rather than as originally named — Crystalite. Powders made in variety of colors in formulations for both injection and compression molding and for extrusion.

ROHM & HAAS CO., Dept. CP, 222 W. Washington St., Philadelphia, Pa.

When inquiring specify CP8450 — see information request blank, pgs. 2-3

## Pine Oil Supply Inadequate To Meet Demand Made By New Users

*Military demands plus increased needs of established consumers boost needs to 60 million pounds*

**Uses** — In many war industries; in disinfectants and sanitary chemicals; in soybean adhesives; mineral ore flotation reagents; processing textile goods; fly spray; soaps; pharmaceuticals.

**Note** — Industry hoped to make 60,000,000 pounds of pine oil during the past year but it is estimated that the amount actually released is nearer 43,000,000 pounds. New demands for oil include its use in combination of solvents and alkalies for cleaning shell cases. Pine oil acts to reduce the "interfacial tension" in the bath, speeding the removal of grease and dirt from precision parts. Demands in sanitary chemical, for use in adhesives for plywood applications have added greatly to the consumption of this product. Manpower limitations are the contributing factors to the inadequate supply. Outlook is that pine oil will not be as generally available in this present year as last. (Data cited here based on figures of Hercules Powder Co.)

HERCULES POWDER CO., Dept. CP, Wilmington, Del.

When inquiring specify CP8460 — see information request blank, pgs. 2-3

## Extruded Rubber Tubing for Food Handling and Milking Machines

*Tubing made to low Durometer hardness; extremely smooth inside bore, holds shape under hard service*

**Uses** — As tubing designed primarily for milking machines and in food handling industries.

**Features** — Maker states that it is now possible to make a tubing of low Durometer hardness and as extremely smooth inside bore by the extrusion method. It is said to hold shape after severe usage and can be extruded as low as 45 Durometer to meet industry's demand for soft tubing.

**Description** — Extremely smooth bore is required in milking machines and food handling hose because of the danger of milk or other food clinging to inside surfaces if they are rough, and souring and perhaps contaminating future flow. A method has been developed which will allow branding of the tubing with name as desired. The hose is manufactured in from 3/16 to 3/8 in. inside diameter and from 1/8 to 5/16 in. wall thickness. Produced only in black.

H. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8461 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



# Wyandotte

## CHEMICALS CORPORATION

# ... ONE OF THE WORLD'S GREAT PRODUCERS OF BASIC CHEMICALS

CAUSTIC SODA

CALCIUM CHLORIDE

SODA ASH

CHLORINE

DRY ICE

BICARBONATE OF SODA

CALCIUM CARBONATE

AROMATIC INTERMEDIATES

HYDROGEN

MICHIGAN ALKALI DIVISION • Wyandotte, Michigan

When inquiring specify CP8462 — see information request blank, pgs. 2-3



## Unaffected by Acids or Alkalies

Permanent, uniform Colonial Porcelain offers many advantages for use in the chemical industries. It is unaffected by most acids, alkalies or fumes. Neither is it affected by rust, corrosion or weathering.

Colonial Porcelain molders are craftsmen. They can make nearly any shape to exact specifications. Send us samples or drawings for price estimates.



THE COLONIAL INSULATOR CO.

967 Grant St., Akron, Ohio

Chicago Office: 1706 Fullerton Ave.

When inquiring specify CP8463 — see information request blank, pgs. 2-3

## MATERIALS

### Sulphur Fumigating Strips

*Effective high concentration sulphur dioxide gas*

**Uses** — For sulphuring barrels and other containers requiring fumigation. Also for closets, lockers and other confined quarters.

**Description** — When used with barrels hole is punched in end of strip which is suspended on a hooked wire and lowered through bung. Do not drip or contaminate containers will falling ash. In other applications may be suspended on wire or stuck upright in container of earth or sand. One strip is adequate to fumigate a 50 gal. barrel. KOBBE LABORATORIES, INC., Dept. CP, 114 E. 32nd St., New York, 16, N. Y.

When inquiring specify CP8464 — see information request blank, pgs. 2-3

### Removing Gummed Paper From Plastic

*Plastic glass sheets and parts when soaked in solution are easily freed of masking papers*

**Uses** — Designed for the removal of gummed paper from plastic glass sheets and formed parts.

**Features** — Solution is easy and safe to use.

**Description** — Sheets and parts are simply soaked in a tank of the compound until gummed paper becomes loose and is then easily peeled off.

TURCO PRODUCTS CO., Dept. CP, 6135 So. Central Ave., Los Angeles, Cal.

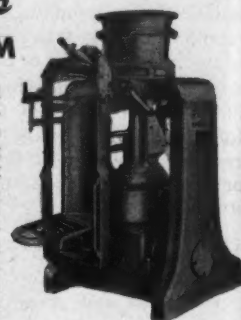
When inquiring specify CP8465 — see information request blank, pgs. 2-3

**Pulverized and Ground Materials  
packaged quickly . . . economically  
by the**

*St. Regis*

### VALVE PACK SYSTEM

Many producers of pulverized and finely ground materials have simplified their packaging operations and are saving money by using St. Regis Impeller Type Valve Bag Packers and 25, 50 and 100 lb. valve type St. Regis Multiwall Paper Bags. These sturdy, heavy-duty shipping sacks are filled and weighed automatically and simultaneously. Pressure of the contents closes the valve of the bag, making the use of closing equipment unnecessary. Packer is adjustable for various bag sizes, and variations can be made in design to adapt the Impeller principle to the vast range of products in the class for which it is specifically designed.



ST. REGIS 105 FV  
IMPELLER TYPE  
PACKER

In addition to Impeller Type Packers, St. Regis Valve Pack Systems include Belt, Screw and Gravity Type Packers for packaging various commodities.



MULTIPLY PROTECTION • MULTIPLY SALEABILITY

ST. REGIS PAPER COMPANY

NEW YORK: 230 Park Avenue

CHICAGO: 230 No. Michigan Ave.

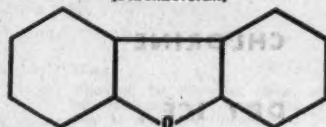
OFFICES IN PRINCIPAL CITIES

When inquiring specify CP8467 — see information request blank, pgs. 2-3



## DIPHENYLENE OXIDE

(Dibenzofuran)



**PURITY:** Ninety-five per cent minimum.

**BOILING POINT:** Approximately 286°C.

**FREEZING POINT:** 81.0°C. minimum.

**SOLUBILITY:** Insoluble in water. Soluble in most common organic solvents, including alcohols, ethers, ketones, esters, aliphatic and aromatic hydrocarbons and chlorinated aliphatic and aromatic hydrocarbons.

**USES:** In the preparation of intermediates for dyes, as a fungicide and insecticide, and in the synthesis of organic chemicals.

**SHIPPING CONTAINERS:** 145-lb. (approximate) barrels.

## A DEPENDABLE Source of Supply FOR ALL COAL TAR PRODUCTS

With unusual production and delivery facilities, plants in 17 strategic locations, and offices in major cities, Reilly offers a complete line of coal tar bases, acids, oils, chemicals and intermediates. Booklet describing all of these products will be mailed on request.

REILLY TAR & CHEMICAL CORP.

Executive Offices:

Merchants Bank Building, Indianapolis, Indiana

2513 S. Damen, Chicago, Ill. • 500 Fifth Ave., New York, N. Y.

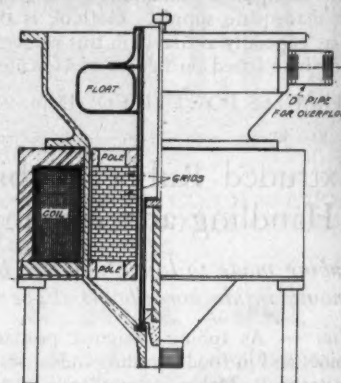
St. Louis Park, Minneapolis, Minn.

**Reilly** COAL TAR  
PRODUCTS

17 PLANTS to Serve the Nation

## FOR IRON-FREE LIQUIDS

### The Dings De-Ironer



Designed to remove from liquids deleterious iron—including particles of iron oxides as small as micron size, the Dings De-Ironer is widely used for purifying ceramic slip and glaze, oils, inks, foods and many other liquids. Capacities range as high as 14000 gals. per hour on some substances. Thousands of lineal feet of iron-catching edges insure maximum iron-removal. Open or enclosed type pressure models are available. Unit is 20" high. For full details, write to Dings.

Dings Magnetic Separator Co.

510 E. Smith St., Milwaukee 7, Wisconsin  
World's Largest Exclusive Builder of Magnetic  
Equipment. Established 1899



When inquiring specify CP8468 — see information request blank, pgs. 2-3

When inquiring specify CP8466 — see information request blank, pgs. 2-3



## MATERIALS

### Glass Drilling Speed, Precision Aided By Easily Applied Product

*Lubricates, prolongs tool life, acts as a cooling agent, prevents smears, greasy deposits*

**Uses** — Designed to contribute to greater efficiency and ease in glass drilling operations, as for example in optical applications.

**Features** — By means of cloth any glass to which it has been applied, is given brilliant lustre, by simple wiping operation.

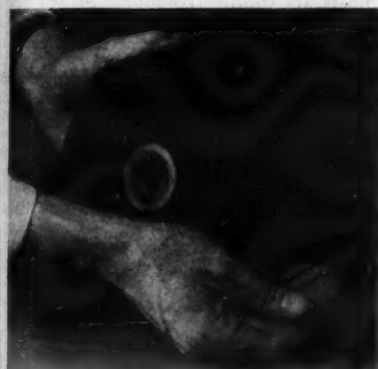
**Description** — In addition to aiding cutting, it lubricates and gives greater life to tool and is a cooling agent. Prevents smears, greasy deposits. Named "Sinszine" and comes in 4 oz. size with applicator. Also pint, quart, gallon. Producers are also designers and makers of diamond cutting tools.

E. KARLSEN, INC., Dept. CP, 125 W. 45th St., New York, N. Y.

When inquiring specify CP8469 — see information request blank, pgs. 2-3

### Plating Rack Tape & Solution

*Use together or individually as may be required, both have good insulating properties, resistance to plating, acid, alkali dips*



TAPE for plating racks

**Uses** — These two products may be used in conjunction or separately as conditions require. Wearing, insulating properties of tape, its resistance to all plating solutions including alkali, acid dips makes it valuable in practically all types of plating service. In some cases, tape is applied

after rack has been coated with solution. The solution provides a corrosion resistant coating with good insulating properties.

**Features** — Both easily applied and no special equipment needed when used in conjunction.

**Description** — Made from plasticized polyvinyl chloride thermoplastic (Koroseal). The tape (Koroseal RX) is black, furnished in 1 lb. rolls,  $\frac{3}{4}$  in. wide, .014 in. thick, tolerance on width plus or minus  $\frac{1}{16}$  in., plus or minus .002 in. on thickness. Approximately 170 lineal ft. per roll. The solution (Korolac RX) is liquid at room temperature, applied by dipping or painting, dries readily. Drying may be hastened in air oven at 150°F. Solution is 1 and 5 gals. Coverage 80 sq. ft. per gal. at .0015 film thickness when dipped. When tape is used alone, rack should be placed in air oven for two hrs. at 300°F.

B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8470 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## DOES *Your* PRODUCT REQUIRE MECHANICAL COLLOID TREATMENT?



Premier Colloid Mill treatment provides benefits unobtainable with other processing equipment. It is the most effective method known for dispersing, disintegrating, homogenizing and emulsifying liquids or pastes. Every particle of a mix *must* pass through the fine clearance between the rotor and stator and be brought to a colloidal state by this mechanical means from which is derived the new science of Mechanical Colloid Chemistry.

Whether you need very fine grinding of the constituents of a mix or merely complete and uniform distribution of each particle of the components throughout the mix, the Premier Colloid Mill assures absolute quality control — production increases at lower costs — finer, more complete, more uniform dispersion—low maintenance costs—continuous operation without breakdown.



**Free**

... copy of our new booklet 144, "Better Products—More Profitably Processed", will be sent upon request. This booklet describes the complete line of Premier Colloid Mills and their applications.

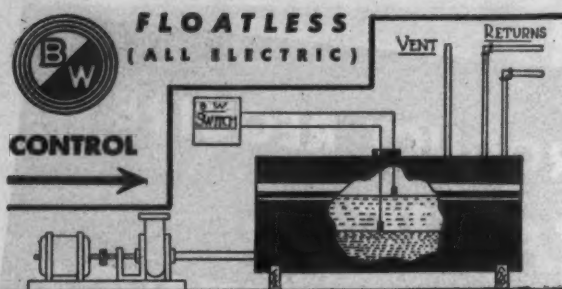
## PREMIER MILL CORPORATION

General Sales Office  
110 EAST 42nd STREET, N. Y.  
Plant and Laboratories  
GENEVA, N. Y.  
Canadian Agencies: 454 King Street West, Toronto, Ontario



The paste type Premier Colloid Mill direct connected to motor. This is a gravity flow mill, easy to clean, with clearance from .001" upward. It is widely used among manufacturers for processing semi-viscous liquids and pastes.

When inquiring specify CP8471 ... see information request blank, pgs. 2-3



## FOR CONDENSATE PUMPS

B/W Floatless Liquid Level Controls decrease the number of pump operations . . . cut power and maintenance costs . . . utilize the capacity of the receiver to its fullest extent. **DIAGRAM:** shows how an LH (for pump down) relay, an E-2 electrode holder and two rod electrodes are used to control pump returning condensate from receiving tank to boiler. By use of an electrode holder fastened on the boiler and a RH (for pump up) relay instead of the LH type relay, the operation of the condensate return pump may be controlled from variations of water levels in the boiler . . . B/W Controls are not affected by pressure, vacuum, acids or chemicals. Relay switch can be located any distance from electrodes. Available for all voltages and cycles. Levels can be controlled to within a  $\frac{1}{4}$ " . . . (Send for twenty eight page catalog number 943.) . . .



When inquiring specify CP8472 — see information request blank, pgs. 2-3

# ★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

## Ready-To-Set-Glass-Vee-Jewels

*Replace sapphire jewels, now practically unobtainable and are superior in some respects*

Previously offered as run-of-mill quality, General Electric Co., (Schenectady, N. Y.) glass vee-jewels are now ready to set. Before jewels are shipped, they are examined under a binocular microscope, which has a magnification of 40 diameters, for incipient flaws in the glass, the depth of the vee and its concentricity. Simultaneously the bearing is explored for pits or roughness with a fine steel needle. All jewels now furnished have passed this rigid inspection and are ready to set in the jewel screws. This inspection saves the purchaser inspection time. Glass vee jewels are now manufactured in quantities to replace imported sapphire jewels now practically unobtainable. They are used in small panel instruments with a moving system which weighs one gram or less. The jewels have the same coefficient of friction as the sapphire and in combination with instrument steel pivots, under vibration, they often produce less friction increase than does the sapphire. Vast improvement has been made in the glass with that previously used. These jewels will resist shocks in excess of those

required to damage the instrument steel pivots. Following inspection and before shipment, all jewels are cleaned in three positions in a special watch cleaning machine and spun dry for five minutes between each position. Two sizes of glass vee jewels are available — diameters of 0.051 and 0.076 inch. (General Electric is an approved source of supply — Navy Dept. Bureau Aeronautics) Bulletin GEA 4134 gives specifications on ordering jewels, together with suggestions for press setting the jewels.

## Canned Smoke

*"Smoke flotation" container provides smoke screen — saves fuel*

A new defensive weapon is known as the "smoke float," a portable container providing protective smoke screen for convoys and task forces. It is designed to supplant former methods which are slower and consume quantities of fuel. It combines the essential features of a paint pail and a smudge pot. It holds smoke generating chemicals and a simple fuse attachment. To prevent sinking when dropped overboard unit is equipped with flotation chamber. While design provides for holding the entire float upright, the chemical generation is performed even if float is entirely submerged. These floats are shipped complete, except for chemicals, from a factory of the American Can Co.

HERE'S A

"LIFE SAVER"

FOR YOUR DRIVES

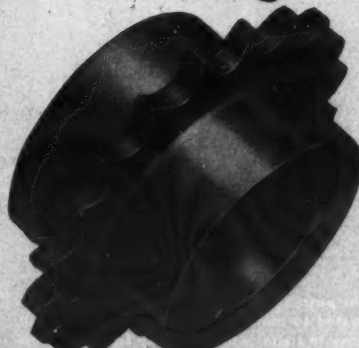
**B**ECAUSE they're cut to the Baldwin Improved American Standard tooth form . . . a design that allows up to 50% more pitch elongation in the chain before it will fail to mesh with the sprocket . . . Baldwin-Duckworth sprockets assure longer life for your drives.

Cut accurately . . . built to the same high standards as Baldwin-Duckworth Roller chain belts . . . these sprockets are made in a variety of types and sizes.

Send for your free copy of the Baldwin Catalog M containing complete information on Baldwin-Duckworth sprockets, size, diameter and dimension tables, engineering data and prices. Write today or call the B-D man.

BALDWIN-DUCKWORTH, DIVISION OF CHAIN BELT COMPANY, SPRINGFIELD 2, MASSACHUSETTS

**BALDWIN** ROLLER CHAIN BELTS



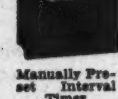
Type C—a sprocket with hubs on both sides—a wide range of sizes available.

When inquiring specify CP8473 . . . see information request blank, pgs. 2-3

These  
Paragons  
of  
Performance

SAVE  
TIME

★ The word Paragon means standard of excellence . . . and you get excellent performance in time-saving with Paragon Automatic Timers . . . on any one of a thousand jobs—conveyor operation, power disconnect, light exposure, liquid agitation, enamel baking, heat-treating, rubber curing, plastic molding, etc. Write us an explanation of one or more of your operations. A Paragon Timer Engineer will make complimentary suggestions.



Manually Pre-set Interval Timer



PARAGON ELECTRIC COMPANY, 33 West Van Buren St., Chicago, Ill.

**Paragon** Chicago

BUILDERS OF ELECTRICAL EQUIPMENT

SINCE 1905

When inquiring specify CP8474 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## IDEAS

### Movie Camera Used in Research on Condensation of Refrigerant Vapor

*Aid in effort to determine rate at which heat load is given up and search for method which will leave larger drops, more condensing area*

Research at the York Corporation's (York, Pa.) laboratories to improve condenser efficiency has resulted in the development of some ingenious devices. The photo shows Dr. R. E. White using a movie camera and a specially built condenser to observe the process of condensation through glass portholes in studying the rate of speed at which refrigerant vapor gives up its heat load. Vapors condensing on the walls of a condenser built up their own insulation thus cutting down the efficiency of the heat absorbing process. A method is being sought by which vapors will form in larger drops and leave more condensing area free.



PHOTOGRAPHS REFRIGERANT VAPORS

### Sanitary, Plastic-Screen Innersole

*Moisture-proof, washable; to curb fungus infections*



RESILIENT PLASTIC INNERSOLE

Washed quickly with soap and water, gasoline or other agents and kept sanitary a prime factor in controlling fungus foot infections prevalent in humid climates.

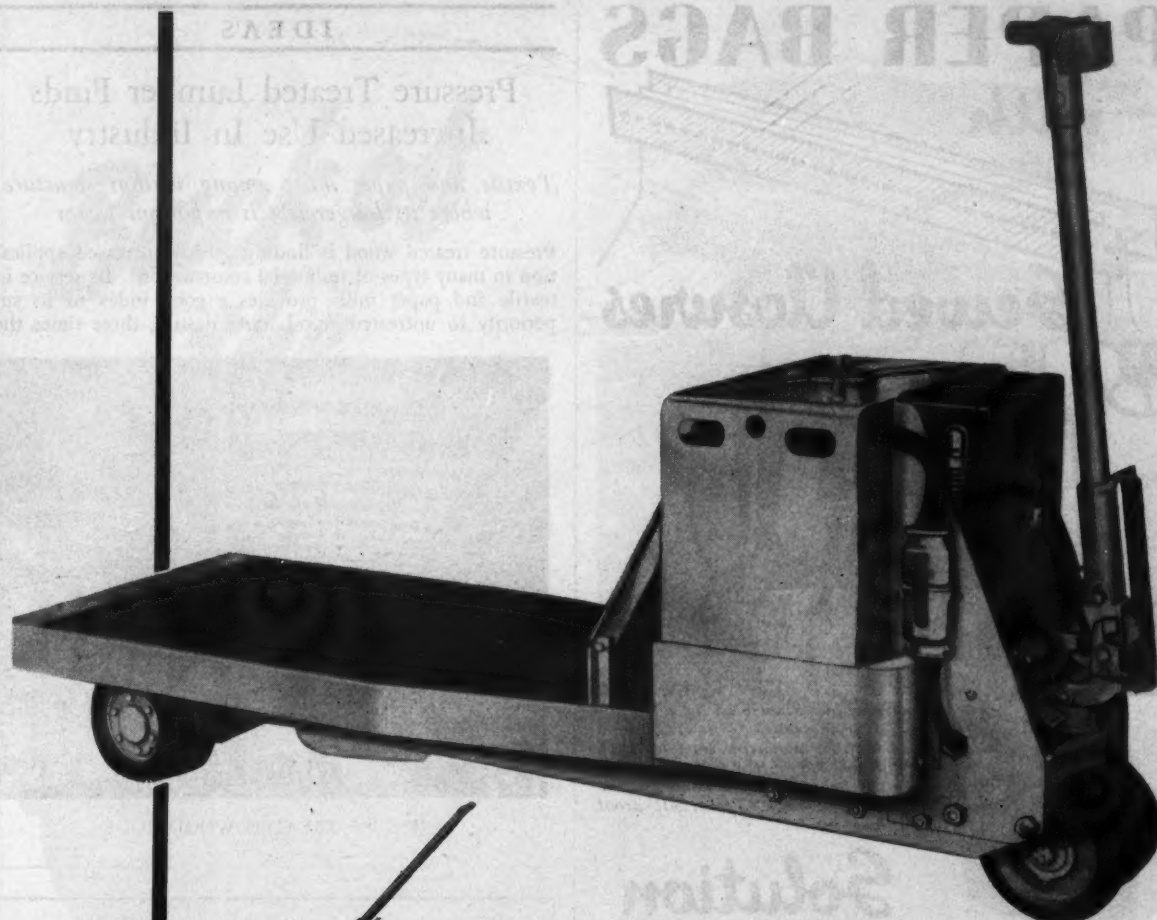
A screen type inner sole is one of the most recent applications of plastic materials developed by the Quartermaster Corps. The soles made up of several layers of Saran (Dow Chemical Co., Midland, Mich.) screen stitched together at the edges are resilient, flexible and tend to ventilate the bottom of the foot. The plastic absorbs no moisture and the soles may be

THE HYDROMATIC Fluid Ram — multi stroke lift — capacity 3500 to 8000 pounds.

THE RED ARROW Capacity to 5000 pounds — side lift improved hydraulic. Check.



Knowing how since 1910 naturally produces lift trucks superior in design and construction.



No wonder  
They come back  
again and again for  
**MORE—**

It's not price that makes them re-order again and again — because the difference is too small.

They come back for more of these motorized Hydro-Lectrics because these super trucks are the only trucks that stand the gaff — 1 woman does the work of 4 men — operate easier and handle heavy loads safely and at low cost.

Designed and built by W. C. and W. R. Stuebing of Lift Trucks, Inc., whose products were famous for performance and quality "as far back" as 1910.

**LIFT TRUCKS, INCORPORATED**  
**CINCINNATI, OHIO**

—When inquiring specify CP8475 . . . see information request blank, pgs. 2-3—

# PAPER BAGS

with

**Sewed Closures**



The machine illustrated is a Union Special Style 60000 C Sewing Head which applies a narrow tape on each side of the top of the bag and automatically trims bag top and cuts the tape between bags. Tight, silt proof closures assured.



## Solution to MANY CONTAINER PROBLEMS

THE use of paper bags with Dubl-Tape sewed closures produced on Union Special bag closing machines, is a highly effective method of packaging, particularly today with wartime container material scarcities. It offers these important advantages:

1. Eliminates use of scarce materials.
2. Requires minimum addition of new machinery.
3. Easily adaptable to existing production systems.
4. Simple to operate; high production; low cost.
5. Provides neat, durable containers.
6. Inexpensive particularly as compared with many other systems.

Write today for complete data on Union Special Bag Closers for your job. UNION SPECIAL MACHINE COMPANY, 442 N. Franklin St., Chicago, Illinois.

# Union Special

When inquiring specify CP8470 — see information request blank, pgs. 3-3

## IDEAS

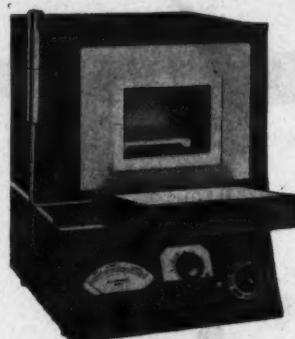
### Pressure Treated Lumber Finds Increased Use In Industry

*Textile and paper mills among various structures where its longer life is important factor*

Pressure treated wood is finding greatly increased application in many types of industrial construction. Its service in textile and paper mills provides a good index of its superiority to untreated wood roofs, lasting three times the



PRESSURE TREATED WOOD ROOF



### HUPPERT LABORATORY FURNACES

Accurate — Sturdy  
Outstanding  
Values

Model illustrated  
**\$74.25**

Complete

### HUPPERT Heat Treating and Laboratory FURNACES

Three heat ranges. High, 1000 to 1800 F., Medium 500 to 1000 F., low 0 to 500 F. Seven Button Control Switch in each heat range furnishes any desired temperature and maintains that temperature as long as you want it. Makes duplication of results certain.

Large Muffle:  $4\frac{1}{2}$  x  $3\frac{3}{4}$  x  $4\frac{1}{2}$  inches. Outside dimensions of Furnace: 14" wide, 16" high, 16" deep. Shipping weight 80 lbs. Operates on 110 volts, A.C. or D.C.

Huppert Furnaces are ruggedly built for heavy duty service, with no exposed contacts. Prices range from \$24.75 up with standard heat ranges up to 2500 F. (Special voltages, dimensions and temperature ranges to order.)

Write for free catalog

**K. H. HUPPERT**

6830 S. COTTAGE GROVE

CHICAGO, ILL.

When inquiring specify CP8477 — see information request blank, pgs. 3-3

## Stops Waste OF STORAGE SPACE AND MATERIAL

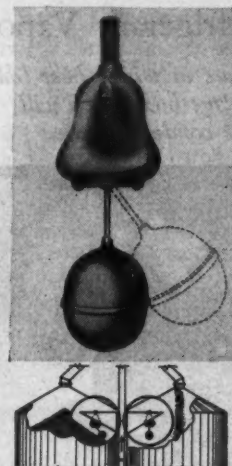
### The TELLEVEL

The storage of bulk material and liquids in bins is automatically controlled by this inexpensive device.

A "Stop" Tellevel located in the top and a "Start" Tellevel located in the bottom of a bin will automatically operate feeders, gates, etc., so that the bin will never overflow, nor will it be found empty.

The swinging arm and float ball, when contacted by rising or released by falling levels of material, makes or breaks electrical circuit, as the need may be.

Investigate Tellevel applications in your plant. Write for descriptive bulletin No. 440.



## STEPHENS-ADAMSON

MFG. CO.

Tellevel — Bin Level  
Controls

Car Loaders

SealMaster Ball Bearings  
Car Pullers

Saw Speed Reducers

11 RIDGEWAY AVE., AURORA, ILL.

When inquiring specify CP8478 — see information request blank, pgs. 3-3

## TRIMOUNT ELECTRIC

### CONTACT MANOMETER for Tank Level Control and Other Applications

This instrument is a U-Tube manometer with electric contact rods inserted in each leg. The manometer tube is connected by piping to a tube projecting down into a tank in which the liquid level is being controlled; or is hooked up for pressure control. As the liquid in the tank rises or falls (or pressure varies), the indicating fluid (mercury) breaks contact with one or the other of the contact rods, thus actuating alarm signals, motor driven pumps or valves, solenoids or other equipment.

This manometer can also be used in conjunction with Trimount Electronic Controls providing a no-voltage circuit in the U-tube.

For full details and prices on this and other Trimount instruments, write today.

**Trimount**  
INSTRUMENT CO.

525 S. PLYMOUTH CT., CHICAGO 5, ILL.

When inquiring specify CP8479 — see information request blank, pgs. 3-3

CHEMICAL PREVIEW



## IDEAS

average seven year period under prevailing humid atmosphere. Tanks and storage are among other applications, as well as cooling towers and platforms. Electrical resistance is among the several advantages of pressure-cresoted wood. In wet weather its resistance does not decrease nearly as much as untreated wood. The various processes by which lumber is treated to protect it against decay, fire, acid and termites are described in detail in a book recently issued by Kopper's Co., (Wood Preserving Div.) Pittsburgh.

### Lead Coated Steel Replaces Brass

*Used on small parts for electric motors; have greater tensile strength*

Lead coated steel is doing a better job than copper or brass in the manufacture of a small part for electric motors. Such steel was adopted by engineers of the Ft. Wayne works of General Electric Co. to save critical metals formerly used for banding rings. Rotors of some motors were previously equipped with such banding rings of either copper or brass so that the rotor could be dynamically balanced by applying drops of solder as required. As solder clings similarly to lead, the change effected the savings cited. Also because of greater tensile strength, thinner bands reduces weight 60%.

### Glass Fibre Tower Packing

*Speed alcohol production used in making synthetic rubber*



Production of alcohol for use in the manufacture of synthetic rubber is speeded by the use of glass fibres as packing for distillation columns. This is a comparatively new development. The fibres replace critical materials formerly employed. Two columns of a recent installation are 43 ft.,  $\frac{7}{8}$  in. high, inside diameter 50 in. There are four packed sections in

GRIDS are lowered into place as layer of packing is completed

each column each 7 ft. high. Fibres are packed in these sections at a density of 37/10 lbs. per cu. ft. Fibres are 85 ten thousandths of an in. in diameter and average 20 in. in length. Rate of feed to column is 11,200 gallons per hr. The amount of products taken per hr. is 4,700 gal. Amount of reflux is 2,300 — 2,400 gph. Vapor velocity in the columns is 5 ft. 6 in. per sec. Analysis of the composition of the alcohol produced is from 190.0 to 191.4 proof, with the greater part of the production near the higher proof. The fibres are manufactured by Owens-Corning Fibreglas Corp. (Photo courtesy Tom Moore Distillery, Bardstown, Ky.)

JANUARY • FEBRUARY, 1944

# Back of the ATTACK!



Graver-built Acid blow-down tank, X-rayed and stress relieved, 11 ft. diameter, 60 ft. long, weight 83,000 lbs.

THROUGH THE railway gates of Graver plants roll carload after carload of fabricated steel plate equipment, built to enable American Industry to provide more and better fighting tools for our armed forces. These shipments include pressure vessels, stills, towers, vacuum vessels, tanks, stacks, breechings, and process

equipment of widely varied types. Much of it is X-rayed and stress relieved . . . all of it is built to meet the most exacting requirements and to give years of efficient, trouble-free service.

Graver Fabricated Steel Plate Equipment is serving many of the most important industrial plants of the country . . . backing the attack that is daily bringing us closer to Victory.

If you are planning for expansion or improvement, consult Graver. We'll gladly submit quotations without obligation.

## GRAVER

### FABRICATED STEEL PLATE EQUIPMENT

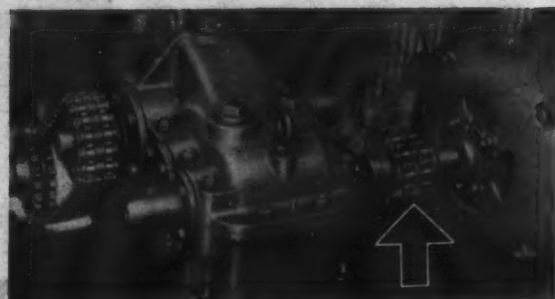
## GRAVER TANK & MFG. CO., INC.

4811-47 Tod Ave., East Chicago, Ind.

NEW YORK • CATASAUQUA, PA. • CHICAGO • TULSA

43-27-S

When inquiring specify CP8480 . . . see information request blank, pgs. 2-3



## INSTALL THESE SIMPLE SHAFT COUPLINGS ON YOUR EQUIPMENT

This original roller chain type coupling consists of but three parts — two sprockets and a length of DIAMOND double-strand Roller Chain. No intricate or delicate parts — load is equally distributed — installation and disconnection are quickly accomplished. Made in a wide range of sizes — write for Bulletin 12. DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis, Ind.

## DIAMOND SHAFT COUPLINGS

When inquiring specify CP8481 — see information request blank, pgs. 2-3

EXACT WEIGHT Scale  
weighing and packaging  
535 Defender Photo Supply  
products — Rochester,  
N. Y.



## High Speed Scales for Chemical Products

Here's how to weigh and package high priced chemical products in small packages. Do it with EXACT WEIGHT scales. These weighing units can be furnished in unbelievable sensitivity and still retain high speed operation. They are expressly designed to give users the highest degree of accuracy under present day industrial demands for volume production. EXACT WEIGHT scales are simple in construction, easy to operate and trouble-free. Write for complete details for your plant.

## THE EXACT WEIGHT SCALE CO.

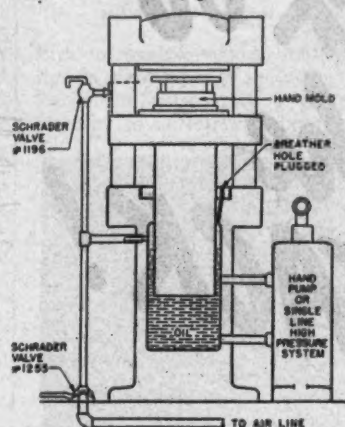
31 W. Fifth Ave. Columbus 8, Ohio  
Dept 2, 1104 Bay St., Toronto, Canada

When inquiring specify CP8482 — see information request blank, pgs. 2-3

## IDEAS

### Pipe Control Valve Speeds-up Hand Press Molding

*Permits closing of ram in three to five seconds*

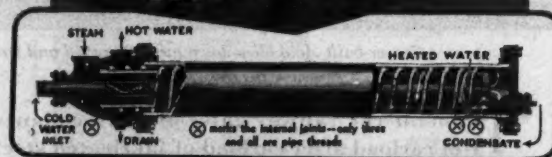


AIR CONTROL

ing material is setting up during the comparatively long interval required to close the press. An ingenious solution to this problem in the form of an air control mechanism was recently demonstrated. It is illustrated in the accompanying diagram. It consists of a  $\frac{3}{8}$  in. pipe line from a standard air reservoir. A foot pedal control valve permits

In jobs on hand presses for which molding pressure is derived from hand pumps, closing of the unit is frequently a slow operation. Also the time required to close the mold under low pressure to the point where high pressure can be applied on the compression type die will result in precluding of the molding material. It may even prevent the piece from filling out properly because the mold-

## HEAT WATER WITH STEAM



### —with the new All-Steel JOHNSON INSTANT HEATER

- Needs no reducers—hooks right up to high pressure steam lines.
- New all steel construction insures prompt delivery.
- Complete range of sizes and capacities.

FOR many years operating men have recognized the Johnson Copper Tube "Instant" Heater as the simplest, quickest, most economical way to heat water with steam.

Here is the self same heater in wartime dress—constructed entirely of steel to make it immediately available, and even lower in cost. Same trouble-free design, same rugged construction which eliminates any need for reducing valves, same complete range of sizes and capacities.

Write for complete details

## The Johnson Corporation

826 WOOD STREET THREE RIVERS, MICHIGAN

When inquiring specify CP8483 — see information request blank, pgs. 2-3

## For Accurately READING or CHECKING Temperatures



## Wheelco High Resistance Portable Pyrometer

This automatically compensated Portable Pyrometer enclosed in a sturdy American Walnut case, is available with a single or double  $5\frac{3}{4}$ " indicating scale in a wide range of calibration. It is designed for extreme accuracy and built for long hard service in field or laboratory. Terminals for thermocouple connections are conveniently accessible on the face of the instrument. For complete information, write for Bulletin D602.

## Wheelco Instruments Co.

641 W. HARRISON STREET CHICAGO 7, ILLINOIS

Originator of "Electronic Principle" Temperature Controls

When inquiring specify CP8484 — see information request blank, pgs. 2-3

## Behind the Scene of Action



The PALMER Thermometer works silently, without glamour, because it was built for long service, guaranteed accuracy and to be easy to read.

When battles are fought above deck, the engineers continue their scheduled tasks, obeying orders side by side with high powered Diesel Engines and the Thermometers and instruments upon which they rely.

When Victory comes, give the Instruments and the Men equal credit for a job well done. In Peace Time, these same Thermometers will give you . . .

LONG LASTING SERVICE  
GUARANTEED ACCURACY  
RED - READING - MERCURY  
(So Easy to Read)

## The PALMER COMPANY, Mfgs.

Industrial, Laboratory, Dial & Recording Thermometers  
2519 Norwood Ave., Cincinnati, Norwood, O.—Canadian Plant: King & George Sts., Toronto

When inquiring specify CP8485 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## IDEAS

the operator to close the ram and to open the platen quickly. A safety valve is provided at the top of the air line and is located so that the ram cannot be forced out of the body of the press. Instead of a time range of from 10 to 30 seconds to close the ram to the point where high pressure can be applied, the use of the air line permits closing of the ram in 3 to 5 seconds. In addition to speeding up the molding cycle, manual fatigue is greatly reduced. (Mechanism developed by Matchlett Laboratories, Springfield, Conn. Data included in this item—courtesy Bakelite Review.)

## Kneading Machine for Materials That Are Heat Sensitive

*For intensive processing of foods, related products requiring accurately controlled treatment*

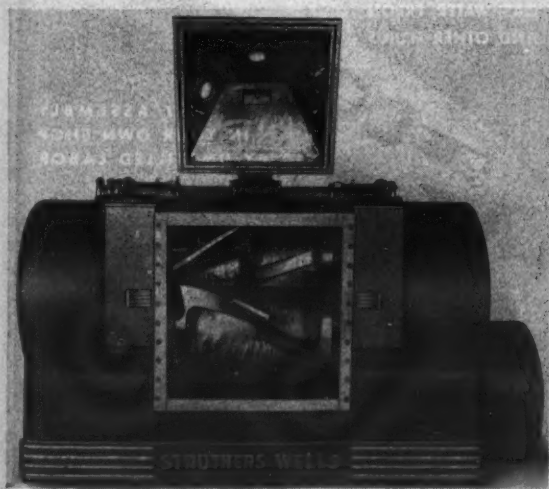
**Uses** — For intensive processing of heat sensitive compounds and food products. Handles heavy, viscous materials. Also for shredding, acetylation, dispersion and many similar purposes.

**Features** — Gears, bearings and all rotating parts are totally enclosed and automatically lubricated.

**Description** — The mixing chamber of the machine (illustrated) is provided with a quick acting cover and tiltable machines are equipped with motor or hydraulically lubricated mechanisms. For vacuum service a single outside stuffing box arrangement is used which maintains operating efficiency, prevents contamination and requires minimum attention for proper adjustment. Most machines can be furnished with jackets for heating or cooling, and can be arranged for vacuum service to meet requirements. On heavy duty units an improved stabilized-torque type of drive is employed to balance uneven loading conditions. Machines are available in extra large size and various types and constructions are offered for processing a range of materials. Bulletin 51 giving complete details is available on request.

STRUTHERS WELLS CORP., Dept. CP, Warren, Pa.

When inquiring specify CP8486 — see information request blank, pgs. 2-3



KNEADING MACHINE HAS IMPROVED BLADE ELEMENTS

JANUARY-FEBRUARY, 1944

**BROWN FIN TUBE HEAT EXCHANGERS**

*Sectional View of Improved Type BPT-1*

Outstanding among these advantages is a new feature — the "Non-removable" rear end assembly — see views above — that provides quick, easy access to the interior of the exchanger. This construction greatly simplifies inspection and cleaning — facilitates the substitution of one "hairpin" with others to secure optimum operation in different duties — and is of particular advantage when the exchangers are mounted high overhead, since it avoids the use of bell housings or other heavy members, and the work of removing these, lowering them to the ground, raising them back up, and putting them on again, for even the most routine inspection.

The new "head seal" is compact — holds the tube and shell in proper alignment — avoids any outboard stress or strain, — and can be assembled easily with a standard wrench.

Other advantages are welded one-piece "hairpins", — the use of Brown resistance-welded, integrally-bonded Fintubes as the heat transfer medium — and — But get the complete story, together with dimensions of standard sizes, performance data, etc. It's all in Bulletin 432. Send for a copy today!

## FREE ON REQUEST BULLETIN 432 GIVES FULL DETAILS

● Engineers, works managers and operating men in all plants having heating and cooling problems, will want a copy of Bulletin No. 432... It gives full details of the new "sectional" heat exchangers that give users many advantages never before obtainable...

Outstanding among these new features is a "Non-removable" rear end assembly — see views above — that provides quick, easy access to the interior of the exchanger. This construction greatly simplifies inspection and cleaning — facilitates the substitution of one "hairpin" with others to secure optimum operation in different duties — and is of particular advantage when the exchangers are mounted high overhead, since



# THE BROWN FIN TUBE CO.

119 FILBERT STREET • ELYRIA, OHIO

MANUFACTURERS OF INTEGRALLY BONDED FIN TUBES AND FIN TUBE HEAT EXCHANGERS

When inquiring specify CP8487... see information request blank, pgs. 2-3



# KIRK AND BLUM

## Industrial Ovens

### SPEED WARTIME PRODUCTION

In plants throughout the nation, Kirk & Blum drying and baking ovens, equipped with modern safety features are turning out faster and better product finishing, stepping-up rate of production and reducing fuel and labor costs.

Whatever your finishing problem may be — no matter how large or small your product — experienced Kirk & Blum Engineers are prepared to design a complete, properly coordinated drying or baking system that will do a BETTER finishing job — at Lower Cost.

Send for Booklet: "Industrial Ovens"

**The KIRK & BLUM Manufacturing Co.**

An Organization of Engineers and Mechanics

2833 SPRING GROVE AVE.

CINCINNATI, OHIO

When inquiring specify CP8488 — see information request blank, pgs. 2-3



## NEW LITERATURE ★

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

### Gun Packed, Gland Packed Expansion Joints

Sixteen-page-and cover bulletin featuring numerous illustrations and diagrams deals with advantages of fixed gland ring type expansion joint. Special attachments provide for packing to be forced into the stuffing box while the joint is under pressure. This construction offers the advantage of avoiding shut-down for repacking. Ring is of cast steel to which two or more bosses are connected. Packing guns, fittings, operation are all described and illustrated. Second half of the book is devoted to similar detailed treatment of gland packed joints.

YARNALL-WARING CO., Dept. CP, Chestnut Hill, Philadelphia, 18, Pa.

When inquiring specify CP8489 — see information request blank, pgs. 2-3

### Butterfly Valves Features Adjustable Stops

Thirty-two page catalog illustrates and describes a complete line of butterfly valves, manufactured in regular sizes from two inches to 84 inches and working pressures from two to nine hundred pounds. Regular flange type is made in Spiral Pipe Mfrs., American Standard Pipe, A.G.A. etc. flange sizes. Special metals are available where their need is indicated. A special feature is the adjustable stops which stop the butterfly vane in any two set positions between open and closed, thus permitting a constant

duplication of any set maximum and minimum opening instead of the wide open and tight closed positions. Numerous types illustrated include hand lever, chain lever, hand wheel, chain wheel, solenoid trip valve. An interesting variety of typical applications are pictured and discussed. Catalog 14 B on request.

R-S PRODUCTS CORP., Dept. CP, Wayne Junction, Philadelphia, 44, Pa.

When inquiring specify CP8491 — see information request blank, pgs. 2-3

### Metal Woven Belts for High Temperature and Air Drawing Furnaces

Metal woven belts in a wide variety of types are offered in an informative four-page bulletin. Belts for such operations as handling loads through draw chambers and cooling furnaces, high temperature enamel dryers. Widths, fabrics, openings, metal, chain, cross supports, belt edge, retaining edge are given for each type illustrated. Bulletin F on request.

AUDUBON WIRE CLOTH CORP., Dept. CP, Richmond St. & Castor Ave., Philadelphia, Pa.

When inquiring specify CP8492 — see information request blank, pgs. 2-3

## Simplicity Gyrating Screens



Simplicity Gyrating Screens are available in 63 different sizes or models.

"Write for further information"

View shows a battery of five Simplicity 3' x 6' Single Deck Screens, part of sixteen units operating in a Western starch plant. These screens are used for germ separation, for clean-up and for the various washing operations. Feed is at the rate of 90 gallons per minute per each machine equipped with 150 mesh cloth.

Using Simplicity Gyrating Screens in place of reels enabled this company to handle a 52% greater grind and at the same time reduce the amount of starch in the wash tailings by 20%.

## SIMPLICITY ENGINEERING COMPANY

DURAND, MICHIGAN

For Canada: Watrous Limited, Brantford, Ontario

When inquiring specify CP8490 — see information request blank, pgs. 2-3

## AEROQUIP HOSE LINES

IN ALL SIZES UP TO 2 1/2"

HOSE  
UNAFFECTED BY  
MINERAL OIL,  
GAS, WATER, FREON  
AND OTHER FLUIDS

EASY ASSEMBLY  
IN YOUR OWN SHOP  
BY UNSKILLED LABOR

LIGHT, DETACHABLE  
FITTINGS FOR BETTER  
PERFORMANCE, SERVICE  
AND MAINTENANCE

AEROQUIP CORPORATION

When inquiring specify CP8493 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW LITERATURE

### Technique of Infra-red Heat Transfer

The technique of infra heat transfer is discussed in a most interesting and practical manner in a paper presented before the I. E. S. Montreal Chapter recently by W. S. Crandall, (Assistant Mgr. Sales, Fostoria Pressed Steel Corp.). In initial portion it deals with various modes of heat transmission, referring briefly to the principles involved and comparing those of the more conventional methods with infra-red. In describing infra-red energy the paper states in part: "Infra-red energy is a portion of the frequency spectrum of electro-magnetic energy. The frequency spectrum is the span of all energy and includes frequencies from 10 to the twentieth power cycles, as encountered in one million volt x-ray down the various bands to subsonic waves of ten cycles frequency. Their waves are measured in angstrom units, microns, or meters. To position infra-red rays as they occur in the spectrum, we shall point out that they lie between the frequencies of the visible portion of the spectrum, or light rays, and the outer little known band or radio frequencies. That portion of the infra-red band which is utilized in near infra-red drying lies adjacent to the visible portion of the spectrum and is, therefore, known as near infra-red." In fact, a portion of the energy emitted by infra-red drying lamps is given forth in the form of visible light. The length of this band is from 6,500 angstrom units to 30,000 angstrom units. The incandescent filaments of infra-red drying lamps operate at lower color temperature than illuminating lamps. Tungsten drying lamps operate at 2500 degrees Kelvin and carbon filament lamps operate at approximately 2200 degrees Kelvin. The paper, in addition to dealing with the baking of finishes on dense materials such as steel also discusses the application of infra-red lamp treatment to non-homogeneous solids and other materials having high porosity. Copies of the paper are available.

FOSTORIA PRESSED STEEL CO., Dept. CP, Fostoria, Ohio.

When inquiring specify CP8494 — see information request blank, pgs. 2-3

### Steam Trap With Magnetic Indicator That Can Be Installed On Either Side of Body

Twenty-page bulletin gives a most complete presentation to a selection of steam traps and features numerous illustrations, diagrams, charts and photos showing many typical installations. The manner in which the thermodynamic properties of steam and water are utilized in the "Drainator" are explained in detail and sectional views of the trap emphasize features of design. Paper, rubber, plastic, milk powdering are among the various applications that are discussed. Special insert describes one of the most recent models that has a magnetic indicator which can be installed on either side of the body. The magnetized needle is influenced by and moves with a magnet located in a chamber inside the plug. A shaft mounted on double bearings, carries the magnet on its outer end and a float and counterweight — on the inner end. Movement of the float, caused by fluctuation of the water level, is transmitted through the magnet to the needle, giving a true identification that the trap is operating properly. Needle bearing is of the non-corrosive instrument type and the needle chamber is protected by glass to exclude dirt. Other advantages of this trap are simplified straight through piping and elimination of usual by-pass. Bulletin 903A and insert on request.

COE MFG. CO., Dept. CP, Painesville, Ohio.

When inquiring specify CP8495 — see information request blank, pgs. 2-3

JANUARY-FEBRUARY, 1944

# UNIQUE NEW INSULATION

**PC Foamglas**  
is permanent  
• impervious •  
• economical •

• Composed of millions of minute cells—air trapped in glass—PC Foamglas defies heat and cold, withstands vapors and moisture, permanently . . . A non-priority material which you can get now.

Impervious to acid atmospheres and dampness — which cause many other materials to swell, warp, or rot and rob them of their insulating qualities — fire-resistant and vermin-proof, be-

cause it is glass—PC Foamglas is odorless and durable, does not deteriorate, therefore does not have to be replaced.

Rigid, yet light,—it weighs only 0.9 lb. a board foot—PC Foamglas is easy to handle. It can be trimmed and shaped right on the job when necessary, can be quickly installed. Think how much time, trouble and money this new insulating material can save you.

**I**NCREASING need for rigid control of temperature and humidity, in chemical, textile, food and many other processing plants, brings increasing demand for the sort of roof insulation you get only with PC Foamglas.

When used as roof insulation, PC Foamglas is applied to the roof deck

in accordance with standard insulation practice, then covered with your approved built-up roofing material. It retains its full insulation efficiency throughout the life of the building—is also used for insulating ovens, tanks and many other types of processing equipment. First cost is last cost when you use PC Foamglas.

### SEND FOR FREE LITERATURE

We shall be glad to send you complete, detailed information about this unique, new insulation, telling how it can save you time, trouble and money, when you fill in and mail the convenient coupon.

## PC FOAMGLAS INSULATION

T. M. REG. U. S. PAT. OFF.

### MAIL COUPON TODAY

Pittsburgh Corning Corporation  
2038-4 Grant Bldg., Pittsburgh, 19, Pa.  
Please send me, without obligation, your FREE literature on PC Foamglas.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify CP8496 . . . see information request blank, pgs. 2-3

# NIAGARA

## AERO HEAT EXCHANGER

Increases production with better cooling . . . .  
Saves space and equipment  
Cuts cost of water cooling

● A WATER SAVER, using the evaporative cooling principle to maintain ideal temperatures and hold them uniform by constant control. Successfully used in

- ...all water-jacketed equipment or engines
- ...quenching water, oils or compounds
- ...lubricants and coolants in machining
- ...air or gas compressors, jackets, inter and after cooler
- ...cooling electronic sets, welders, vacuum tubes, transformers, electric induction heaters

Saves piping, pumping and maintenance cost of large water systems; costs less to install; saves 95% of cooling water. Provides closed system free from contamination. Provides heating when needed. For Bulletin, address Department CE-113.

### NIAGARA BLOWER COMPANY

6 E. 45th Street, New York City

District Engineers in Principal Cities

When inquiring specify CP8497 — see information request blank, pgs. 2-3



*In Steel Mills  
Clean Dry Air  
is a "Must"!*

This Aridifier removes dirt, moisture and oil from the air line in this large Eastern steel plant—one of many steel mill users. Air-operated skip hoists, controls and other equipment are fully protected from the destructive effects of contamination in compressed air. The Aridifier is always effective because it employs the one correct principle for removing air contamination—centrifugal force.

The Aridifier in this steel plant is the flanged type, used in air lines from 3" to 10". The threaded type, shown below, is standard for smaller sizes; 3/8" to 2". Send for Bulletin 543.

LOGAN ENGINEERING CO.  
4900 Lawrence Ave., Chicago, Ill.

Engineering Representatives  
in Principal Cities

*The* **ARIDIFIER**  
Dries and Cleans Compressed Air

When inquiring specify CP8498 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Steel Industry Announces Packaging Standards for Overseas Shipments

A 180-page manual "Packaging, Marking & Loading Methods for Steel Products for Overseas Shipment," contains instructions which have been approved by military, naval and other government authorities. The standard packages described have been designed to protect steel products during shipment to any part of the world. Steel itself, paper and wood are the most commonly used packaging materials. Many of the standard packages employ all three materials. Coatings and special rust inhibiting oils and greases are included in specifications. The instructions are most complete and augmented by numerous drawings and illustrations.

AMERICAN IRON & STEEL INSTITUTE, Dept. CP, 350 Fifth Ave., New York, N. Y.

When inquiring specify CP8499 — see information request blank, pgs. 2-3

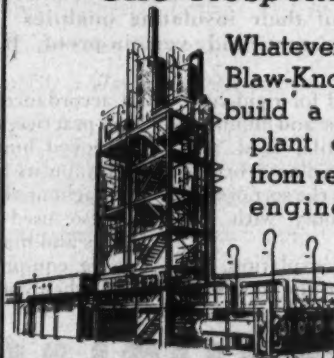
### Lift Truck Operators Guide

Pocket size (3 3/4 x 7 in.) guide for lift truck operators contains brief, practical instruction on all the routine and basic principles of operation and in addition a number of "tricks" that will increase tricks and capacity for handling difficult jobs quickly and safely. Other sections of this 24 page book emphasize by simple illustrations typical load carrying devices and methods of stacking. Available on request.

TOWMOTOR CO., Dept. CP, 1226 E. 157th St., Cleveland, Ohio.

When inquiring specify CP8500 — see information request blank, pgs. 2-3

## PROCESS PLANTS from idea to Operation One Responsibility



Whatever your process—Blaw-Knox is ready to build a complete new plant or an addition from research through engineering, fabrication and construction, to initial operation.

Complete plants or equipment for the following processes . . .

Distillation	Kilning and Calcining	Organic Synthesis
Gas Absorption	Polymerizing	Emulsification
Solvent Extraction	Evaporation	High Pressure Processing
Solvent Recovery	Crystallization	Impregnating
Heat Transfer	Drying	Gas Cleaning
Furnacing	Mixing and Stirring	and others
Cracking		

### BLAW-KNOX DIVISION OF BLAW-KNOX CO.

FARMERS BANK BLDG., PITTSBURGH, PA.  
Offices in Principal Cities

When inquiring specify CP8501 — see information request blank, pgs. 2-3

## OHMITE RESISTORS

*A Type  
and Size  
for Every  
Need*



The extensive range of Ohmite types and sizes makes possible an almost endless variety of regular or special resistors to meet every need. Core sizes range from 2 3/4" diameter by 20" long to 5/16" diameter by 1" long, and are available with standard or special windings, terminals and other features.

### Send for Catalog No. 40

Write on company letterhead for Catalog and Engineering Manual No. 40.

OHMITE MANUFACTURING CO.  
4917 Flournoy St., Chicago 44, U.S.A.

When inquiring specify CP8502 — see information request blank, pgs. 2-3

**JUST  
OUT**

**Tells How to Get  
Easier Control of  
Air • Gas • Steam  
or Liquids -- Quick  
Tight Shut-Off**



for Pressures to 25 p.s.i.

**SLIDE VALVES**  
1" to 20" Sizes  
Hand, Lever  
Wheel or Chain  
Control

**BUTTERFLY VALVES**  
1" to 48" Sizes  
Manual Lever,  
Wheel or Chain  
Control or  
Any Automatic  
Control

Write for **FREE** Copy  
**W. S. ROCKWELL COMPANY**

56 CHURCH ST.

NEW YORK 7, N. Y.

When inquiring specify CP8503 — see information request blank, pgs. 2-3



# EXTRA! EXTRA!

## ARMSTRONG HUMIDIFICATION

Licks Dry Air Problem

Read all about it!

Free Booklet!

AT LAST — a simple, practical, economical, quiet HUMIDIFIER that installs as easy as a unit heater. Costs only \$100 complete for 40,000 cu. ft. capacity. Fully guaranteed.

Prevents DRY-OUT-ITIS: Checks fiber breakage, warpage and checking of wood, paper shrinkage, spoilage of certain foods, cracking of leather, weight loss, etc.

BETTER WORKING COMFORT: improves worker efficiency; fewer winter colds; cuts absenteeism.

CUTS "STATIC" HAZARD: Minimizes fire and explosion hazard from static electricity; prevents dust.

Used in hundreds of leading plants. Write for new Bulletin.

ARMSTRONG MACHINE WORKS  
880 Maple St. Three Rivers, Mich.

ARMSTRONG STEAM TYPE HUMIDIFIERS

When inquiring specify CP8504 — see information request blank, pgs. 2-3



## LO-VEYORS



## Standard Vibrating Conveyors for Open or Dust-proof Operation

High efficiency, self-contained and ready to run. Choice of open or closed pan and tubular types. Get rid of belts, chains, idlers, rollers, etc. Drive unit in automatic balance and fully enclosed. Write, giving material and tonnage handled.

**AJAX** FLEXIBLE COUPLING CO.  
Incorporated 1920 **WESTFIELD, N. Y.**

When inquiring specify CP8505 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## NEW LITERATURE

### Control, Storage of High Pressure Gases

Eighteen page catalog illustrates and gives detailed specifications of unit parts, assemblies and equipment for the control and storage of high pressure gases. Parts include needle valve with hose connection, reducing regulator, rate gauge, single gauge regulator, expansion valves; also illustrated is the maker's Gasometer for storing gas in laboratory and includes means for expanding the gas and provide control of it as it passes to the other laboratory equipment. It embodies improvements which minimize gas leakage, prevents loss of sealing fluid from splashing over the edge of an outside container when the bubbles of gas escape from the bell and keeps the sealing fluid from getting into the lines. Gasometer available in sizes of 1, 2, 4, 6 etc. . . up to 30 cu. ft. capacity. Torch equipment is also shown. A list of rare and common gases giving prices and data is a related bulletin of interest in the same connection.

OHIO CHEMICAL & MFG. CO., Dept. CP,  
1177 Marquette St., N. E. Cleveland, Ohio.

When inquiring specify CP8506  
— see information request blank, pgs. 2-3

### Portable and Suspension Grid Heaters

Bulletin describes construction, operation and application of grid heaters in portable and suspension models in various capacities providing from 5112 to 204900 BTU. Installed in idle space at any level, they conserve floor space. Full heat attained rapidly to warm pump houses, crane cabs, scale houses, etc. Bulletin on "Electromode Industrial Heaters" on request.

AMERICAN FOUNDRY EQUIPMENT CO.,  
Dept. CP, Mishawaka, Ind.

When inquiring specify CP8507  
— see information request blank, pgs. 2-3

### Filters for Food and Bottling Plants

Eight page two-color illustrated bulletin describes a line of clarification filters. Design and construction features emphasize synthetic porous stone as support for loose filter aids with a method of fully mechanized cleaning which eliminates inconvenience of usual filter cleaning. Action photos, sectional views give a clear presentation of operating principles. Poly-flow and intermittent modes are illustrated as are complete portable filter stations and bottling strainers. Bulletin F-103 on request.

SWENSON EVAPORATOR CO., (Div.  
Whiting Corp.) Dept. CP, Harvey, Ill.

When inquiring specify CP8508  
— see information request blank, pgs. 2-3

## Chemical Plants Favor These Amsco-Nagle Pump Features

Process plant engineers have selected Amsco-Nagle centrifugal pumps for one reason or another, but among those using our Type "QW" vertical shaft pump, three features have these men's preference:

1. Bearings are fully enclosed, positively shielded against intrusion of abrasive or corrosive materials being pumped.
2. The inverted inlet eliminates gas-binding and causes hydraulic thrust to counter-balance the weight of the revolving parts.
3. One of the supporting members that ties the pump housing to the floor plate serves as a discharge pipe, saving construction materials, reducing overall weight and improving strength and rigidity.

Add to these features the wide choice of impellers, each for a specific loading condition; the simple slippage seal adjustment; and lubrication of bearings from floor level and you have further reasons for the growing popularity of this type of pump.

Soundly engineered design and construction features are common to Amsco-Nagle pumps — they apply equally to the Type "SW", another vertical wet pit pump; the "SD", a dry pit pump; and to the Types "A" and "T" horizontal shaft pumps.

Bulletin 940 covers the distinctive features of each pump in detail and pictures the various types of impellers that are available. May we send you a copy?

P-114-N—  
An Amsco-Nagle  
6" type "QW"  
frame 14, pump  
for handling  
abrasive and cor-  
rosive sump  
water.



**Amsco**  
AMERICAN MANGANESE STEEL DIVISION  
Chicago Heights, Illinois

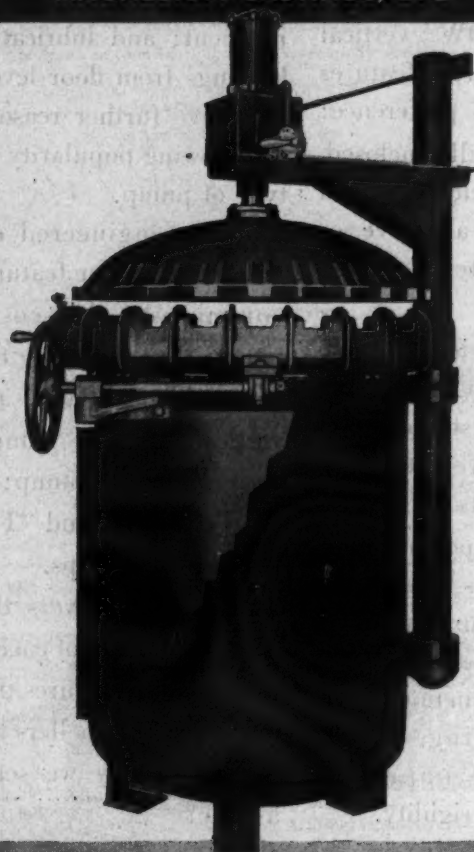
FOUNDRIES AT CHICAGO HEIGHTS, ILL.; NEW CASTLE, DEL.; DENVER, COLO.; OAKLAND, CALIF.; LOS ANGELES, CALIF.; ST. LOUIS, MO.  
OFFICES IN PRINCIPAL CITIES

**AMERICAN**  
**Brake Shoe**

When inquiring specify CP8509 — see information request blank, pgs. 2-3

# J & C AUTOCLAVE

IMPREGNATING SYSTEMS FOR  
MAGNESIUM CASTINGS, ETC.



Pioneers in the design and manufacture of Autoclave equipment, the Jackson & Church Co. is fully equipped to lay out and build any and all types of impregnating systems. The tank shown here is equipped for either steam or electrical heating and is enclosed in an insulating jacket. Regardless of the materials you wish to impregnate—magnesium castings, aluminum parts, wood, etc.—it will pay you to call in the Jackson & Church experienced engineers.

JACKSON & CHURCH CO. • SAGINAW, MICHIGAN

When inquiring specify CP8510 — see information request blank, pgs. 2-3

## NEW LITERATURE

### History of the Steam Turbine

Twenty-four illustrated booklet presents a historical summary of the development of the steam turbine. Although treating the subject in a non-technical style photos and historical data are most interesting. The booklet also serves to demonstrate the place that the turbine is filling in war production.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8511 — see information request blank, pgs. 2-3

### Double and Single Speed Reducers

Twelve page catalog on speed reducers features a volume of practical data helpful in selecting and operating such equipment. Both single and double reduction types are given detailed treatment and arrangement for triple reduction is explained. Double reduction units have adjustable first reduction through v-belts and sheaves, permit use of any standard high speed motor and adjustable hinged base on top of reducer to support motor saves floor space. Single reduction units are made in five sizes, each with three different gear ratios. Double reduction type is available in units to give almost any ratio between 10 to 1 and 60 to 1. Determining character of load is made easy by a guide tabulating various equipment according to uniform shock load, moderate shock load and heavy shock load. Dimensions of the reducers, horsepower are conveniently listed. Diagrams, sectional views show design and construction details and operating features. Catalog 643 on request.

STEPHENS-ADAMSON MFG. CO., Dept. CP, Aurora, Ill.

When inquiring specify CP8512 — see information request blank, pgs. 2-3

If you need  
distilled water use the  
**PUREST**  
It costs no more . . .

With Barnstead Water Stills, there's one thing you can be sure of . . . you get the purest distilled water at the lowest possible cost. And this holds for all Barnstead Water Stills . . . from the smallest 1/2 gallon per hour laboratory model right up to the largest 500 gallon per hour industrial type unit.

Also, with the wide range of sizes available, it is always possible to eliminate waste distillation by getting a Barnstead Still that exactly meets your quantity as well as your quality needs. Operation by gas, steam or electricity.

**Barnstead**  
STILL & STERILIZER CO. INC.

66 LANESVILLE TERRACE, BOSTON, MASS.

When inquiring specify CP8513 — see information request blank, pgs. 2-3



Not all synthetic  
gloves are  
oil resistant!

## Lower Cost-per-hour Hand Protection with Stanzoils

Made of neoprene, highly resistant to oils, acids, caustics — better protection from burns and other crippling harm, so no loss of production, no costly disabilities. Stanzoils won't cause skin irritations as rubber sometimes does. Workers like them. Extra long wear — more safety for your money. Standard styles, black, white. Write for current delivery date.



Synthetic Rubber Division  
**THE PIONEER RUBBER COMPANY**  
239 Tiffin Rd., Willard, Ohio, U.S.A.  
New York • Los Angeles

MADE WITH DU PONT NEOPRENE

When inquiring specify CP8514 — see information request blank, pgs. 2-3



## The Favored Kettle In Leading Chemical Plants

For 50 years GROEN Stainless Steel Steam Jacketed Kettles have been serving the foremost Chemical Plants, Packers, Food Plants, Drug makers, etc. For duration, kettle interior is of Stainless Steel, with exterior of Stainless-clad. Shown is our popular 2/3 jacketed tilting type with single motor driven agitator. If you are needing a kettle, consult our Priority Division. Write us today.

THERE'S A TYPE  
FOR EVERY  
NEED

. . . standard or built  
to suit special re-  
quirements. Tell us  
your problem.



**GROEN MFG. CO.**

4535 W. Armitage Ave.

Chicago 39, Ill.

half a century of fine kettles

When inquiring specify CP8515 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW LITERATURE

### Vacuum Cooling Equipment

Steam jet vacuum cooling equipment is the subject of a bulletin of eight pages featuring numerous illustrations, engineering data and descriptions of typical applications. The initial portion of the booklet is devoted to a brief, practical discussion of the principles of vacuum cooling and points out such advantages as low initial cost, absence of moving parts in the system, with the exception of the rotating elements in the centrifugal pumps, low operating cost, compact arrangement, no vibration and no expensive refrigerant replacements and no noxious odors. The five essential parts of such apparatus are dealt with in detail: flash chamber, make-up or water control equipment, booster ejectors, booster condensers and secondary vacuum equipment. A chart shows the relationship between temperature pressure and volume of water vapor within the normal temperature range from vacuum cooling. Twelve items of information required when requesting information on vacuum cooling units are also listed. Bulletin G-8 is available upon request.

ELLIOTT CO., Dept. CP, Jeanette, Pa.

When inquiring specify CP8516 — see information request blank, pgs. 2-3

### Monel Plays Important Part in Equipment for Plant Producing Salt from Sea Water

Current issues of major metal alloys organization features a series of plant views of various installations in new plant on Pacific Coast now in full production of a full line of all grades of salt from sea water. The various types of equipment include salt evaporators, rotating coolers, special vibrating screens for accurate grading of salt, troughs and screw conveyors, grinders, condensate pumps, gas fired rotary dryers, filters for handling salt and brine. The important part played in the construction of all this equipment by monel is stressed and the application described. (Process Industries Quarterly — Vol. 7 No. 4).

INTERNATIONAL NICKEL CO. Inc., Dept. CP, 67 Wall St., New York, N. Y.

When inquiring specify CP8517 — see information request blank, pgs. 2-3

### Horizontal Rotary Positive Displacement Pump

Horizontal rotary positive displacement pumps — capacities 120 gpm and 300 gpm designed and used in truck, storage, transfer, fleet fueling, bulk plant and various pumping and handling operations are described in series of bulletins. By means of adjustable pressure control valve control piston is hydraulically operated. Specially designed built-in surge valves take care of any line surge. Bulletin on request.

GRANBERG EQUIPMENT CO., Dept. CP, 1308 67th St., Oakland, Cal.

When inquiring specify CP8518 — see information request blank, pgs. 2-3

### Power Generating & Distributing Equipment for the Chemical Industries

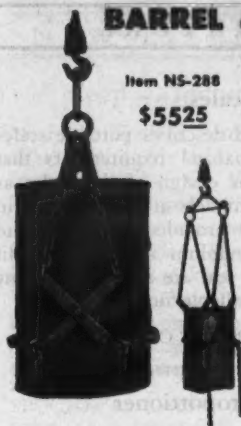
Electricity in the chemical field is the subject of an attractive new 40 page bulletin illustrating and describing equipment used in the chemical industry for generating, transforming and distributing power; for material handling; for processing in the electro-chemical and thermo-chemical fields; and for operation in dusty atmospheres and hazardous locations. Bulletin GEA 3710 on request.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8519 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

### BARREL & BOX GRAB



Item NS-288  
\$5525

For picking up any type of wood or steel barrel, box or container, from 40" diameter down to small nail keg size. Will lift up to 2000 lbs. "Barrel Grabs" to handle heavier or larger loads built on special order. Rigid toggle construction. Even the small plant should have at least one of these "Barrel Grabs". Once you use it you will wonder how you ever got along without it—order yours today.



FOR HIGH OR LOW  
CEILINGS  
ANY SIZE  
16" TO 48"

Item J-632  
\$3200

### UNIVERSAL GRAB

Use for picking up all types of heavy boxes, crates, bales or other loads where hooks may be used. Heavy, forged steel hooks with an adjustable spread of from 16" to 48". Sturdy  $\frac{3}{4}$ " BBB chains. Will save a lot of man-power.

### BARREL TRUCK

Item S-911  
\$3350



Sliding catch grips until released by operator; note long hook for bilge type barrel.

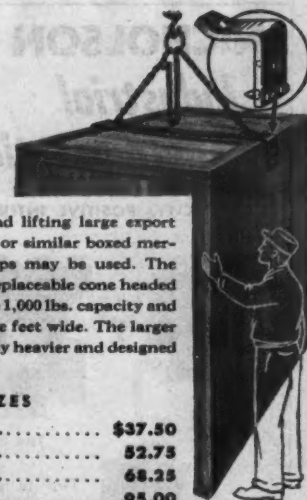
#### Loads Automatically

Barrels weighing up to 1,000 lbs. handled with ease . . . truck weighs but 85 lbs. To load, shove truck up against barrel or drum, then drop sliding steel catch over rim . . . pull toward you and truck loads automatically—loads from row as easily as when barrel stands alone.

Sturdily constructed of heavy steel. 10" metal wheels. Greatest width only 22", permitting it to pass through narrow aisles and doors.

### Spike Type BOX GRAB

Lifts up to 4000 Lbs.



Used for grabbing, holding and lifting large export boxes, heavy boxed machinery or similar boxed merchandise on which spiked grips may be used. The gripper plates are fitted with replaceable cone headed spike bolts. Model illustrated is 1,000 lbs. capacity and may be used on boxes up to five feet wide. The larger models are built proportionately heavier and designed to assure capacity ratings.

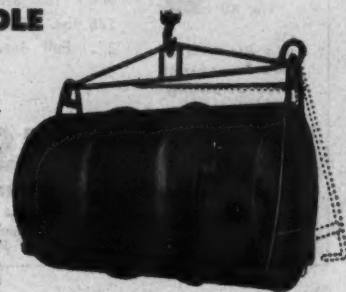
#### FOUR SIZES

Item B289-1 cap. 1,000 lbs.	\$37.50
Item B289-2 cap. 2,000 lbs.	52.75
Item B289-3 cap. 3,000 lbs.	68.25
Item B289-4 cap. 4,000 lbs.	95.00

### BARREL CRADLE

Item B-285  
\$2750

Use for picking up any shape barrel or drum. Especially designed for picking up barrels and plywood or fiber drums without chimes (flush ends). Model shown handles barrels 20" to 25" in diameter and 32" to 36" in length. Capacity 1,000 lbs. Special sizes quoted on application. Heavy bar stock, welded construction. One end built rigid, pivoted end has spring tension which simplifies engaging of cradle fingers to any type drum or barrel. Painted P. S. gray. Weight 22 lbs.



### Combination TRUCK & DRAIN RACK

#### Loads Automatically

To pick up drum from standing position: (1) Tilt truck against drum. (2) Slide steel fingers down to engage top rim of drum. (3) Rock truck back to wheeling position. Sturdy frame and free rolling wheels make easy trucking of heaviest drums. Slight push downward on truck handles raises wheels and lays rack on floor, thus providing convenient drain for any drum.

Heavy angle iron frame, tubular handles, all welded construction. Two eight-inch roller bearing wheels. Weight 90 lbs.



\$4250  
Item NS-506

#### When Ordering:

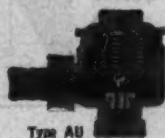
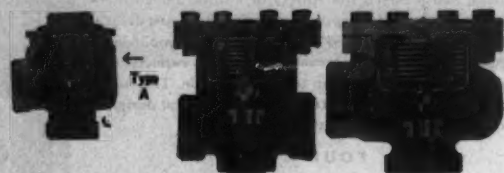
Always give "Item" number; this will help avoid errors. All prices are f.o.b. Detroit, Mich. Please accompany orders with your priority; this will speed delivery. We design and build a complete line of materials handling equipment.

**Palmer Shile Co.**  
7126 West Jefferson Ave., DETROIT 17, MICH.

When inquiring specify CP8520 . . . see information request blank, pgs. 2-3

## NICHOLSON Industrial Thermostatic TRAPS

HAVE ENORMOUS WATER AND AIR DISCHARGING CAPACITY; POSITIVE INTERMITTENT VALVE ACTION



Type AU

No Air-Blinding  
No Freeze-ups  
No Dribbling

Two to six times greater valve area and capacity than average traps. Will not water log. Requires no adjustment for any pressure, vacuum to 225 lbs. Five types — sizes 1/4" to 2". Full details in new Bulletin No. 843.

### W. H. NICHOLSON & CO.

181 ORIGON ST., WILKES-BARRE, PA.

Piston and Weight-Operated, Compressed Air and Gasoline Traps; Steel and Stainless Steel Flanges; Flexible and Compression Shaft Couplings; 2-3-4-5-Way Valves; Expanding Manifolds; Arter Process; Steam Eliminators and Separators.

When inquiring specify CP8521 — see information request blank, pgs. 2-3

## PUMPING SLURRIES

### ... with the NON-MECHANICALLY LINKED Diaphragm Pump

Air pressure or vacuum, operating through solenoid valves controlled by electric timers ... that's what makes the O-D-S Diaphragm Slurry Pump tick. There's no mechanical linkage to the diaphragm. Each of the several sizes is designed this way. Maintenance is low.

In writing for Bulletin 307-B, write your full details. Tell us about your problem.

**OLIVER UNITED  
FILTERS INC.**

Oakland 1, Calif.  
New York 18 Chicago 1



When inquiring specify CP8522 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Portable Scales

Four page bulletin illustrates and describes portable scales and pictures of the many specialized requirements that they meet. Features of the basic design of the scales as well as these of the individual models are emphasized in the illustrations. Great accuracy provided by design and construction of full floating pendulum mechanism, split second speed and frictionless oil seal are among the many described in detail. Bulletin available on request.

TOLEDO SCALE CO., Dept. CP, Toledo, Ohio.

When inquiring specify CP8523 — see information request blank, pgs. 2-3

### Corrosive Fluid Proportioner

A device that provides a simple method of proportioning sulphuric acid and corrosive fluids accurately without the use of any moving parts in contact with the liquid is described in illustrated four page bulletin. This air actuated proportioner was designed for the feeding of sulphuric acid in conditioning boiler feed water and for proportioning solutions such as aluminum sulphate, ferrous and ferric sulphates to the rate of flow of another fluid. It has been used successfully in control of alkalinity caused by zeolite softening of water, reduction of pH value in the effluent from hot process softeners and control of pH value for prevention of carbonate deposits in cooling systems. Bulletin Number 2985-A on request.

COCHRANE CORP., Dept. CP, 17th & Allegheny Ave., Pittsburgh, Pa.

When inquiring specify CP8524 — see information request blank, pgs. 2-3

### Hendric Mitco Open Steel Flooring

NON-SLIPPING  
NON-CLOGGING  
LONG LIVED  
90% OPEN



Mitco panels are pressure-formed without the use of mechanical locking devices. No rivets or bolts to fail. No welding to cause residual stresses. Only carefully selected square edge steel bars of the correct chemical and physical properties are used. Bearing bars are dovetailed to receive the cross bars. Hundreds of tons of hydraulic pressure force the cross bars into the bearing bars so the metal COMPLETELY FILLS THE DOVETAILS, locking Mitco into an integral unit, protected at this vital point from all atmospheric corrosion, acid fumes and other destroying elements.

### HENDRICK MANUFACTURING COMPANY

Cardonsdale, Penna.

30 Church Street, New York City

Sales Offices in Principal Cities

Also manufacturers of perforated metals, perforated metal screens and decorative grilles; light and heavy steel plate construction.

When inquiring specify CP8525 — see information request blank, pgs. 2-3

## A MISSING SAFETY DEVICE CAN MEAN A MISSING WORKER!



### Get the Safety Equipment You Need Promptly — from PULMOSAN!

Accidents won't wait for safety equipment that is "on order"! Rely upon Pulmosan to keep you supplied with adequate, dependable safety equipment for every hazardous operation in your plant.

Headquarters for "everything in industrial safety", Pulmosan has hundreds of safety items in stock for prompt shipment. Our engineering and development department is at your service to advise on any safety problem or to make equipment to special requirements. Let us know your needs.

### PULMOSAN SAFETY EQUIP. CORP.

Dept. EP,

176 Johnson St., Brooklyn 1, N. Y.

Everything for  
Industrial  
Safety

RESPIRATORS,  
Acid and Chemical  
Handling, Bulletin  
Boards, Face and  
Eyeshields, First  
Aid, Foot Guards,  
Gas Masks, Goggles,  
Helmets,  
Hoods, Protective  
Clothing, Welding,  
etc., etc.

PULMOSAN  
STOPS Accidents

When inquiring specify CP8526 — see information request blank, pgs. 2-3

## Exactly the Right BLOWER

for  
every furnace,  
oven or kiln



Model 50 Blower

No matter what may be the air requirements of your furnaces, ovens or kilns, you will find a suitable turbo blower in the extensive Billmyre line of many models and hundreds of sizes. The simple, sturdy and durable construction of these efficient units will help to maintain your maximum wartime production by their dependable operation in continuous 24-hour per day duty. No parts are subject to wear, no internal lubrication is required, and their operation is smooth, quiet, and free from pulsation. Write for Bulletin B-4.

ALLEN BILLMYRE CO.

445 FAYETTE AVENUE

MAMARONECK, N. Y.

### ALLEN BILLMYRE AIR AND GAS BLOWERS

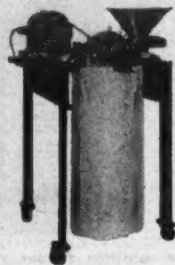
When inquiring specify CP8527 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## UNSKILLED HELP

Trained manpower is not needed for the operation of dustless Mikro-Pulverizers. A new man (or woman) can get to work on a Mikro and in five minutes you'll be enjoying all the advantages of fine grinding with particle sizes *mechanically* controlled. Mikro-Pulverizers reduce pulverizing costs all along the line. They cut power costs, save floor space, cut cleaning time in half. Send for 32 page catalog.



IF YOU'RE INTERESTED IN MAKING POWDERED METALS, WE HAVE SOME NEW INFORMATION WHICH WILL INTEREST YOU. WRITE US.

PULVERIZING MACHINERY COMPANY  
55 Chatham Road • Summit, New Jersey

**MIKRO-  
PULVERIZER**

When inquiring specify CP8528 — see information request blank, pgs. 2-3

## Take a Look into your Tomorrow



Whether your peacetime production takes up again where it left off—or strikes a faster tempo as you adopt new processes, incorporate new materials—

The correct application of power drives will continue to be of vital importance.

With your first need for worm gear speed reducers, write "Cleveland" into your specifications. You can install Cleavelands and forget them—just as you have for the past 30 years.

If you need "Specials"—send us your prints. Dependable Cleveland Worm Gear Drives will help you look with confidence into the "tomorrow" of your manufacturing operations.

THE CLEVELAND WORM & GEAR COMPANY  
3257 East 80th Street Cleveland 4, Ohio  
Affiliate: The Farnal Corporation, Centralized Systems of Lubrication  
IN CANADA: Peacock Brothers Limited

**CLEVELAND** Speed Reducers

When inquiring specify CP8529 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## NEW LITERATURE

### Soap — Industrial Uses

"Soap — Tool of Peace — Weapon of War" is the title of a diverting and informative pocket size booklet traces the history of soap and outlines its many industrial applications. Some of the headings are "Talking Through Soap" citing its use in making telephone wires. "Reading From Soap" — paper applications, "Riding on Soap" — tire manufacture and many others of similar nature. Sent on request.

PROCTOR & GAMBLE CO., Dept. CP, Cincinnati, Ohio, Gynne Bldg.

When inquiring specify CP8530  
— see information request blank, pgs. 2-3

### Anti-Freeze Compounds

Twenty-eight page and cover booklet gives practical instructions on winter care of car and truck cooling systems. The operation of cooling systems is carefully explained and the proper maintenance of the various parts described. Drawings and sectional views visualize the various pointers given. Heater installation is also dealt with and several pages are devoted to descriptions of Ethanol, Methanol and Ethylene Glycol anti-freeze materials.

E. I. Du PONT de NEMOURS & CO., Dept. CP, Wilmington, Del.

When inquiring specify CP8531  
— see information request blank, pgs. 2-3

### Communication Systems Catalog and Selection Chart

Catalog on communicating systems features an industrial survey chart designed to aid in analyzing individual communication requirements and securing suggestions from communicating system engineers recommendations to meet specific needs as to switching arrangements, noise levels and other operating factors. Charts and text give details of four basic systems up to 100 stations. Available upon request.

EXECUTONE INC., Dept. CP, 415 Lexington Ave., New York, 17, N. Y.

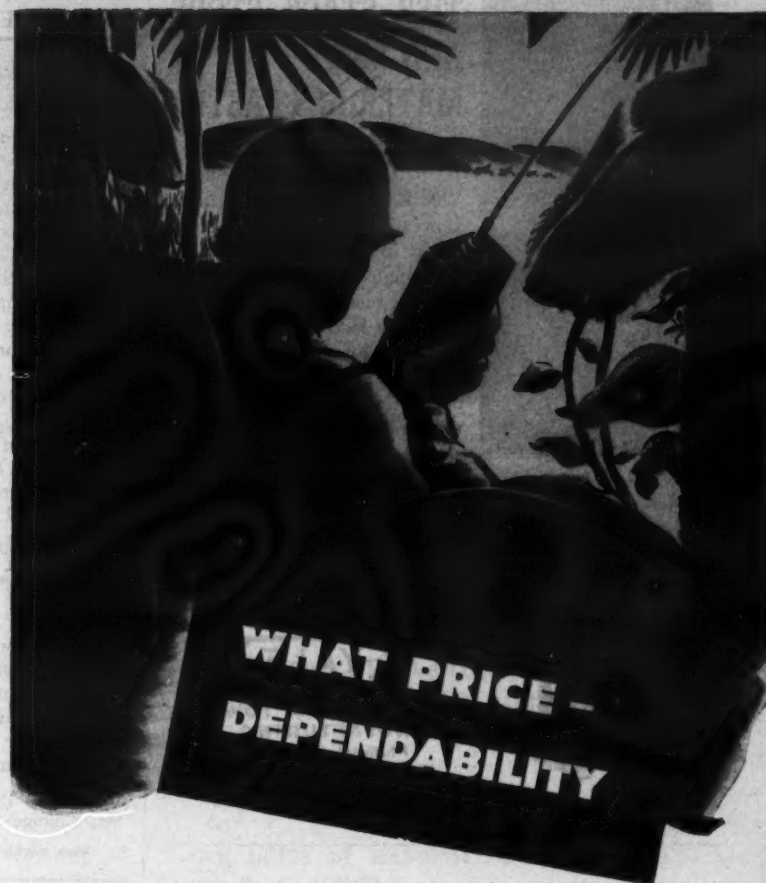
When inquiring specify CP8532  
— see information request blank, pgs. 2-3

### Belt Drive Handbook

Seventy-page handbook deals in interesting detail with the automatic belt tension control feature of this maker's drives. Manner in which it is designed to eliminate belt slip is shown in illustrations. In addition, this handbook gives complete v-belt and flat belt drive selection tables, specifications and installation instructions.

AMERICAN PULLEY CO., Dept. CP, 4200 Wissahickon Ave., Philadelphia, Pa.

When inquiring specify CP8533  
— see information request blank, pgs. 2-3



Dependability of radio equipment doesn't begin with the Walkie-Talkie man reporting enemy movements or directing Allied advances. . . Dependability originates in plants manufacturing ALL war equipment so essential in conducting a successful mechanized war. . . To achieve this dependability, thorough, accurate, efficient testing and processing equipment is demanded. Kold-Hold's sub-zero and dual temperature units are productioneered\* to enable you to meet rigid specifications with dependable testing and processing.

. . . Detailed information on Kold-

Hold products and their many applications furnished upon request.

Ask for catalog No. S-Z 431.



"Hi-Low" Machine

**KOLD-HOLD**

\*Engineered for Production

434 NORTH GRAND AVENUE, LANSING, 4, MICHIGAN

When inquiring specify CP8534 — see information request blank, pgs. 2-3

## TIER, STACK, STORE AND MOVE MATERIALS FASTER — BETTER!

Yale Electric Industrial Trucks represent the latest developments in self loading materials handling equipment.

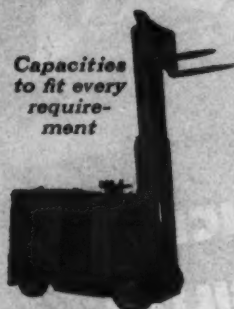
These modern tools tier, stack and store loads right up to the ceiling, no overhead space is lost. In addition, they have small over-all dimensions for operation in narrow aisles, around sharp corners—even carrying full capacity loads.

Whatever the need . . . whatever the load . . . there's a Yale Electric Industrial Truck ready to do the job with greater efficiency and time saving economy.



**THE YALE & TOWNE  
MANUFACTURING CO.**  
Philadelphia Division  
Philadelphia 24, Pa., U.S.A.

Capacities  
to fit every  
require-  
ment



When inquiring specify CP8535 — see information request blank, pgs. 2-3

## AFTER V-DAY-You'll need

# ALOYCO VALVES

One fact is certain about business after the war — it will be highly competitive. Only with first-class equipment can you keep costs low enough to hold your place in the competitive struggle. Therefore, all equipment — especially pipe lines — should be modernized as soon as critical materials are again available. Look over your pipe lines and make your plans to get the stainless steel valves and fittings you will need.

Alloyco Stainless Valves and Fittings are available now for new installations on high priorities, and for maintenance and repairs under M. R. O. regulations.



**Stainless Steel  
VALVES and FITTINGS**

GATE VALVES • GLOBE VALVES  
Y VALVES • CHECK VALVES  
LEVER THROTTLE GATE VALVES  
TANK VALVES  
SCREWED FITTINGS  
FLANGED FITTINGS  
GAUGE GLASS FITTINGS

ALLOY STEEL PRODUCTS COMPANY, INC.  
1550 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

When inquiring specify CP8530 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Nomogram Aids Selection of Air Current Breakers for Load Center Sub-stations

Sixteen-page-and-cover illustrated entitled "Packaging Pays Off" describes standardized load center sub-stations of 100 to 2000 kvs capacity for meeting the power supply requirements of various industries. It features a simple nomogram which makes it possible to select the correct air circuit breaker for any application of a standardized load center unit sub-station. Description and illustrations of equipment combinations stress flexibility as a characteristic of standard unit sub-stations. To fit individual needs for protection, incoming line arrangement may be vertical lift switch gear, disconnect switch, function box, oil fuse cut-outs, high voltage or roof bushings. These may be connected through an oil, non-flammable liquid, or an air-cooled transformer to dead front air breaker switchgear. Selection of low voltage breakers which are manually operated, electrically operated, stationary mounted or draw-out mounted. No. B6285.

ALLIS CHALMERS MFG. CO., Dept. CP, Milwaukee, Wis.

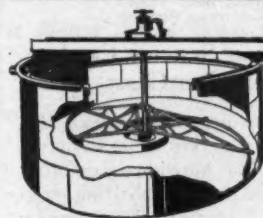
When inquiring specify CP8537 — see information request blank, pgs. 2-3

### Potentiometer Controllers

Eight-page-bulletin describes a selection of potentiometer controllers and explains electronic control employed in these instruments to gain instant control in line with the temperature recorded. There are four operating diagrams and a table of controller scale ranges obtainable with various thermocouples and a photoelectric pickup unit.

WHEELCO INSTRUMENTS CO., Dept. CP, Harrison & Peoria Sts., Chicago 7, Ill.

When inquiring specify CP8538 — see information request blank, pgs. 2-3



## "Auto-Raise" Protects Mechanism From Damage

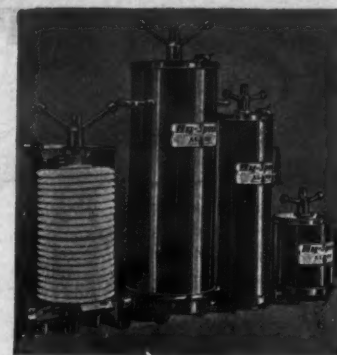
The Hardinge "Auto-Raise" Thickener mechanism lifts the scrapers above any obstruction or over-load in tank bottom, then removes the excess material.

Write for Bulletin 31-C

**HARDINGE**  
COMPANY, INCORPORATED • YORK, PENNSYLVANIA  
NEW YORK, CHICAGO, SAN FRANCISCO, TORONTO

When inquiring specify CP8539 — see information request blank, pgs. 2-3

## SOMETHING NEW FOR OILS



PAK-FILTERS  
showing  
PAK unit.

In addition to our very well known Hy-Speed Filters; designed for the perfect filtration of all kinds of liquids; we now present a new line of filters developed for the same fine filtration — but for oils.

## Alsop PAK-FILTER

Completely filters out all dirt and foreign matter leaving a result of clean clear oil — like new.

The inexpensive filter medium shown above is a pack of filter discs in a unit which can be thrown away after use, and a new PAK inserted quickly.

PAK-FILTERS are made in portable, on stands and for pipe line connection, for every need.

Write for our new book on  
**PAK - FILTERS**  
**ALSOP ENGINEERING CORP.**

15 Alsop Square

Milford, Conn.

When inquiring specify CP8540 — see information request blank, pgs. 2-3

## Speeds Handling of Bulk Materials



40 to 60 tons of material per hour easily handled with the Hough Model "HL" Payloader, which has proved a most helpful ally for increasing production in the process industries. Picks up its load, carries it to nearby or distant point, and dumps it into truck or bin. This Payloader is also used as a drawbar tractor for spotting cars and haulage jobs. Built by Hough as a complete unit — not a tractor attachment. Bucket capacity one cubic yard; drawbar pull 8,000 lbs.; hoist capacity 3,000 lbs. For full information write for Bulletin 138.

**THE FRANK G. HOUGH CO.**  
Libertyville, Illinois

**HOUGH Payloader SHOVELS**

When inquiring specify CP8541 — see information request blank, pgs. 2-3



## NEW LITERATURE

### Fire Extinguisher Reference Folder Includes Comprehensive Data on Use and Maintenance

A handy file folder containing a number of specification and data sheets on several types of fire extinguisher also features an extinguisher selection chart printed on the inside of the file folder itself. It shows at a glance for numerous types of the extinguisher produced by the maker the following: chemicals employed, recharging period, method of operation, methods by which pressure is created, range of stream, rated capacity of most common size, quantity of principle extinguishing agent produced, nature of principle extinguishing agent, extinguishing effects, effects of freezing temperatures on extinguisher charges. Also the adaptation of the various extinguishers to fires of the several classifications designated as A, B, C, D. The literature contained in the folder includes a comprehensive booklet on use and selection of fire extinguishers, precautions, methods of combating fires, servicing extinguishers.

THE GENERAL DETROIT CORP., Dept. CP, 2200 E. Jefferson Ave., Detroit 7, Mich.

When inquiring specify CP8543 — see information request blank, pgs. 2-3

### Time Pattern Controller, Regulates Schedules and Sequences in Temperatures, Pressures & Levels

An eight-page bulletin, file size for convenient filing, describes and illustrates in detail a time pattern controller. In contrast to processes where it is desirable to hold temperatures constant this time pattern type automatically governs changes to different temperature levels, holding at such levels for required intervals and then permitting or actuating further change. A number of sequences are possible and highly accurate control is achieved. Two basic units comprise the time pattern controller. The units are housed separately in the maker's standard rectangular cases. The units are (1) the pattern transmitter and (2) the controller. They require but one connection — a length of tubing or pipe. The instruments may be located side by side or up to 1000 feet apart. The pattern transmitter consists of a rotating cam, accurately shaped to provide desired control program and a pneumatic transmission unit. A cam follower rides along the edge of the cam. Motion of the cam causes the follower arm to change position and in turn causes the output air pressure from the transmission unit to vary. As in a standard transmission system, the air pressure is transmitted through the tubing to receiving unit in the controller. Bellows in the receiving unit assumes a different position for each pressure and bellows is connected to instrument control index. Value of the control point is changed continuously and precisely as prescribed by the cam.

BROWN INSTRUMENT CO., Dept. CP, Wayne & Roberts Aves., Philadelphia, Pa.

When inquiring specify CP8543 — see information request blank, pgs. 2-3

### Guide for Selection of Packing Lists Equipment for which Each is Suited

Bulletin on packings, tables in alphabetical arrangement more than three dozen different fluids handled in process work and general plant services and lists the correct packing for each liquid, gas and vapor. An additional tabulation describes the form and construction of each of the maker's packings and lists typical kinds of equipment for which each one is suited.

GREENE, TWEED & CO., Dept. CP, Bronx Blvd., at 238th St., New York 66, N. Y.

When inquiring specify CP8544 — see information request blank, pgs. 2-3

JANUARY • FEBRUARY, 1944

For More Than  
**5 YEARS —**

**GATES**  
**V-Belts**

*Made Entirely of*

**\* SYNTHETIC Rubber**

Have Been Wearing 2-Times to 3-Times as Long as ANY Natural Rubber Belt on Drives where Heat and Oil Conditions are Especially Severe!

Five years before there was any warning of a rubber shortage, Gates was already supplying American Industry with thousands upon thousands of V-belts made entirely of SYNTHETIC rubber.

**\*A very special synthetic rubber was chosen by Gates. This synthetic had not been developed as merely a "substitute" for rubber. In certain important applications it is greatly superior to natural rubber. Under severe conditions of heat and oil, for example, the Gates special synthetic V-belt in hundreds of plants is actually outwear-**

**ing belts of natural rubber by as much as 230%!**

This long record of success in making V-belts of synthetic rubber stands unrivaled in the rubber industry. No other maker of V-belts has had anything approaching Gates' experience and proved success in this field.

This is particularly important to you now. The time has come when Gates' superior "know-how" in the making of synthetic rubber V-belts can be put to work for you right in your own plant.

You have only to look in your telephone directory and call the Gates Field Engineer. He will put at your service the full benefits of Gates' knowledge and experience without the slightest obligation.

**THE GATES RUBBER COMPANY**

*Engineering Offices and Stocks in All Large Industrial Centers*

**GATES VULCO ROPE DRIVES**

CHICAGO, ILL.  
549 West Washington

NEW YORK CITY  
215-219 Fourth Avenue

ATLANTA, GA.  
738 C. & S. National Bank Building

LOS ANGELES, CAL.  
2240 East Washington Boulevard

DENVER, COLO.  
999 South Broadway

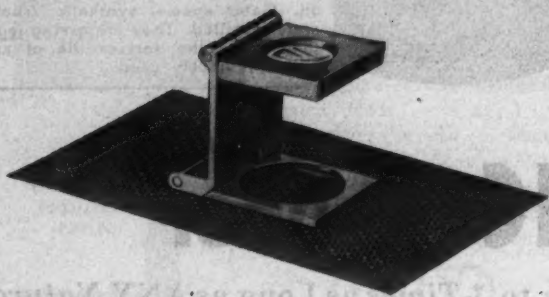
DALLAS, TEXAS  
2213 Griffin Street

PORTLAND, ORE.  
333 N. W. 5th Avenue

SAN FRANCISCO, CAL.  
1090 Bryant Street

When inquiring specify CP8545 . . . see information request blank, pgs. 2-3

# NEWARK METALLIC FILTER CLOTH



... it will stand this test

**NEWARK**  
for **ACCURACY**

Even during the unremitting drive for war production, we have adhered without deviation to the fundamental NEWARK policy of producing accurately-made filter cloth. Our older skilled craftsmen still operate the looms. And we have not strayed one bit from our long established policy of buying only the best in wires.

The NEWARK Line of Fine Metallic Filter Cloth for process plants covers all known needs both as to range in mesh, style of weave and kind of metal, such as Monel and Stainless Steel. It is woven firmly and uniformly. It is free from looseness or waviness. It forms a good cake, easily discharged.

The slogan "NEWARK for Accuracy" has a real economic meaning to you. You get a cloth that produces uniformly satisfactory filtration results with long-life.

Send for our latest catalog.

**NEWARK WIRE CLOTH COMPANY**

336 VERONA AVENUE

NEWARK, NEW JERSEY

1-NWC-3

When inquiring specify CP8540 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Electric Industrial Trucks

Seventy-six page catalog illustrates and describes war standardized line of electric industrial trucks. Each of the more than twenty models in the line is presented in great detail both in illustrations and tabulated specification data. An interesting series of photos show many typical applications. Hoists, skids and hand lift trucks are also included in a separate section.

YALE & TOWNE MFG. CO., Dept. CP,

When inquiring specify CP8347 — see information request blank, pgs. 2-3

### New Units for Localized and General Lighting

Advanced methods of both localized and general lighting to meet requirements imposed by current production and efficiency demands are described by means of series of photos of installations and detailed data concerning needs, equipment used and results in terms of personnel comfort, production, savings and economy in lighting equipment maintenance. Some of the many plant scenes include lens manufacture, machining operations, tool repair, fine inspections, wood working, assembling operations, etc. A special section of the book illustrates a wide selection of units for localized lighting each providing fine adjustment and diffusion of light required for specific jobs. These models include some fluorescent units. Four standard fluorescent units for general lighting are also shown and offer a selection that meets requirements for wide range of mounting heights and installation requirements. Ask for "Flashes" No. 943.

FOSTORIA PRESSED STEEL CORP., Dept. CP, Fostoria, Ohio.

When inquiring specify CP8548 — see information request blank, pgs. 2-3

## RODNEY HUNT

**Super-Strong  
ROLLS**

WOOD, METAL, RUBBER, PLASTIC

Specializing in rolls for 50 years, Rodney Hunt today makes use of new materials and applies patented features of design and construction which make rolls super-strong. Textile, paper and many other industries have ended roll troubles and cut roll costs by standardizing on "Rodney Hunt". Write for Catalog No. 740.

**RODNEY HUNT MACHINE COMPANY**

273 MAPLE ST.

ORANGE, MASS., U. S. A.

When inquiring specify CP8540 — see information request blank, pgs. 2-3



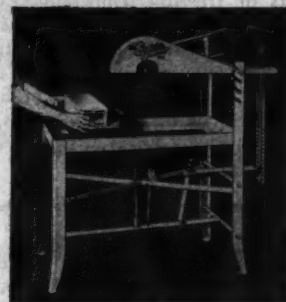
**Yes... YOU CAN CUT SILICA BRICK IN 5 SECONDS WITH A CLIPPER MASONRY SAW**

### 'TAILOR-MAKE' SPECIAL SIZES

**THE SPEED  
AND ECONOMY  
IS AMAZING!**

You can easily cut any masonry material with Clipper Masonry Saws... Clay, Concrete, Magnesite, Sillimanite or Acid Resistant Brick.

Write for latest Catalog.



**CLIPPER MANUFACTURING CO.**  
4004 MANCHESTER ST. LOUIS, MO.

When inquiring specify CP8550 — see information request blank, pgs. 2-3

**Our 12 Years' Experience**

**STAND BEHIND THE SUCCESS OF THIS VALVE!**

Perfecting by Hills-McCanna engineers and time-tested and proven in over 500 different services. It is your most effective means of controlling the flow of acids, alkalis, alcohols, solvents, aqueous solutions, semi-solids, compressed air, hot and cold water, etc. Banishes common valve troubles — wear, corrosion, sticking, clogging which lead to repairs, replacements, shut-downs. Outstanding diaphragm principle isolates working parts from fluid. Leak-tight — drip-proof — no packing — practically no maintenance.

— no pockets or ports to obstruct flow as in globe and gate valves or plug cocks. Reduces friction, maintains pressures.

**HILLS-McCANN**  
SAUNDERS PATENT  
DIAPHRAGM VALVES

**Streamlined Flow**

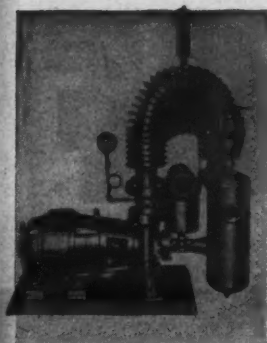
Send for Catalog V-41 for full details.

**HILLS-McCANN CO.**  
2178 NELSON STREET, CHICAGO

PROPORTIONING PUMPS • AIR & WATER VALVES • CHEMICAL VALVES  
MARINE VALVES • FORCED FEED LUBRICATORS • DOWMETAL CASTINGS

When inquiring specify CP8551 — see information request blank, pgs. 2-3





**A Condensate  
Return System  
That  
Improves Quality  
Increases  
Production  
Saves  
Fuel Cost**

**T**HE Cochrane-Becker High Pressure System of Condensate Return is a remarkable new system of draining condensate from process equipment and returning it, freed of entrained air and gases, to the boiler, at high pressure and close-to-process temperature.

The principle is that of an educator, the action of which is energized by a centrifugal pump and balanced by a loop that insures continuous positive priming. An air separator in the circuit automatically and continuously separates entrained air and gases, and the condensate is delivered to the boiler without flash loss anywhere along the closed circuit of the C-B system.

Savings in process work are amazing. Write for details and copy of Cochrane Publication No. 3113.

COCHRANE CORPORATION, 3147 North 17th St., Phila., Pa.

**Cochrane**

When inquiring specify CP8553 — see information request blank, pgs. 2-3

**CONSERVE CRITICAL MATERIALS**

**NO  
RESTRICTIONS  
on  
IDEAL  
rechargeable  
STORAGE BATTERIES  
for  
FLASHLIGHTS**

**Guaranteed  
Service**

Although Dry cells are drastically restricted, you can buy IDEAL Rechargeable Storage Batteries! Enjoy a bright, steady, dependable light always by using this proven, permanent type of flashlight battery.

**OUTLASTS 400 DRY CELLS!** One IDEAL Rechargeable Storage Battery can eliminate purchase of 400 or more dry cells. (Conserves about 68 lbs. of carbon, zinc and other vital materials.) Fits Standard Flashlight Cases. Same size as two 1 1/4" size D dry cells. Now in its 5th year—used in thousands of Industrial Plants. Guaranteed. Write for Bulletin F881242.



**IDEAL Sycamore**  
IDEAL COMMUTATOR DRESSER CO.

**5137 Park Avenue Sycamore, Illinois**  
Sales Offices in all Principal Cities

When inquiring specify CP8553 — see information request blank, pgs. 2-3

JANUARY-FEBRUARY, 1944

**NEW LITERATURE**

**Steam Distribution Systems and  
Steam Traps and Pipe Strainers**

Sixteen-page-and-two-color bulletin illustrates and describes steam traps for power plants, steam distribution systems and industrial steam processes. Features of the traps listed are small size and light weight, standardized sizes and easy installation. Detailed sectional drawings augment a brief but explicit explanation of the principles of operation of impulse steam traps. It states that a mere 5% of full condensate capacity is sufficient to keep center orifice sealed against discharge of live steam. These traps are factory set and ready to use without adjustment. Comprehensive tables gives thermodynamic properties of saturated steam. A section of the book is also devoted to pipe strainers and a spread of pictures show views in plants where both these units of equipment are in actual use. These views cover a wide range of applications. Copies of this bulletin will be sent upon request.

YARNALL-WARING CO., Dept. CP, Chestnut Hill Station, Philadelphia, Pa.

When inquiring specify CP8554  
— see information request blank, pgs. 2-3

**Water Baths and Dry Heat Sterilizers**

Twelve-page-two-color illustrated catalog contains complete data on such laboratory equipment as electric constant temperature water baths, gravity convected and mechanical convected dry heat sterilizers and electric drying ovens. Most of the various models are shown in large, detailed illustrations, specifications are given in complete tables for easy reference and the wide variety of applications as well as performance ranges are also cited. This catalog is sent on request.

ELECTRIC HOTPACK CO., INC., Dept. CP, 1229 Cottman St., Fox Chase, Pa.

When inquiring specify CP8555  
— see information request blank, pgs. 2-3

**Carbon & Graphite Products  
for Process Application**

Sixteen-page-and-cover catalog section covers industrial applications of carbon and graphite products. Structural shapes; brick, beams, plates, rods, hollow sections, cements, pastes. Tubular products: pipe, tubes, fittings, types of joints, valves, pumps, heat exchangers (tubes, fittings) and similar applications to chemical equipment and processing are among the various subjected indexed. Data on physical characteristics and specifications are tabulated and the various products as well as their use in actual installations are illustrated. Section M-8000 on request.

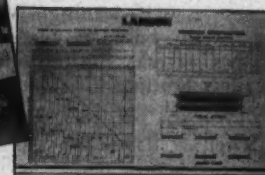
NATIONAL CARBON CO., Dept. CP, Box 6087, Cleveland, Ohio.

When inquiring specify CP8556  
— see information request blank, pgs. 2-3



**THIS  
BOOK**

**TELLS YOU . . .** how to move your products faster, more efficiently, more economically. In war-busy plants throughout the nation, Lamson Roller Gravity Conveyors are eliminating waste motion, adding to the productivity of manpower, stepping up output. Let us show you how Lamson Roller Gravity Conveyors can take an active part in your post-war business, too. Fill out and mail the coupon for your copy of this valuable booklet.



**LAMSON CORPORATION  
Syracuse 1, N. Y.**

Please send me free copy of booklet describing Lamson Roller Gravity Conveyors.

Name ..... Position .....

Company .....

Address ..... State .....

Because of the demand for this booklet it can be sent only to those who name their company and position.

**LAMSON CONVEYORS**

When inquiring specify CP8557 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Application of Scales In Precise Operations In Specialized Processing Industries

Wide application of manufacturer's complete line of scales as applied to standardized and highly specialized requirements in various processing industries is interestingly illustrated in new bulletin. Text describes operating features of the various models shown and precise manner in which they meet the weighing problems imposed. Among those of particular interest are "scales interlocked through a central control panel to automatically handle a complete batching operation involving several ingredients, use of hopper scales in rubber manufacturing plant, automatically weighing and recording pulp moving on belt conveyor, precise filling to required weights of cans to hold varnish and similar fluids. A copy of this book, "Toledo Scales for the Process Industries" available on request.

TOLEDO SCALE CO., Dept. CP, Toledo, Ohio.

When inquiring specify CP8558, see information request blank, pgs. 2-3

### Wet Suppression for Dust Control

Two page bulletin describes "hydro-clone" dust suppressor unit adapted to general dust control where extremely heavy loadings of dust are involved. Smooth, efficient action and safety are among the numerous features cited as typical of this equipment. The cleaning action of this unit does not depend upon passing the air through a series of waterfalls or cascades. All dust is thoroughly wetted down by taking advantage of a different process — high velocity impingement of the dust particles on copiously washed surfaces, in a swirling spiral path. It keeps dust particles, air and water in a constant contact. No cloth bags, screens, nozzles. Equipment is self-cleaning. Vertical cylindrical construction, built of plate steel. The bulletin shows several illustrations and gives complete specifications in convenient form. Sent on request.

WHITING CORP., Dept. CP, Harvey, Ill.

When inquiring specify CP8559, see information request blank, pgs. 2-3

### Atmospheric & Blast Gas Burners

Atmospheric and blast gas burners as described in fourteen page illustrated bulletin meet the varied requirements of industrial heating equipment and gas appliances of all kinds. They are designed to provide great flexibility in service and simplicity in operation. A few of the possible applications include heating cauldrons, chemical stills, autoclaves, varnish kettles and many similar operations. The selection offered includes: Atmospheric burners (concentric ring burners), drilled port type burners, refractory head burners, multiple pipe burners, atmospheric torch burners, atmospheric immersion burners, atmospheric venturi mixers and blast burners. Capacities shown are for blue flame characteristics. Bulletin AB-43 on request. SURFACE COMBUSTION CO., Dept. CP, 2375 Dorr St., Toledo 1, Ohio.

When inquiring specify CP8860, see information request blank, pgs. 2-3

Page 52

# BASKETS OF



**AT & M Centrifugals**  
In all machinable metals and coatings  
Save Time and Space



# KNOW-HOW

## You May Find in One of Them a "Reconversion Plus" to Help Win the Peace... with AT&M

"But my problem is different!" you may say. Then, above all, thoroughly investigate how centrifugal force can be engineered to solve it.

### PRODUCTION PROBLEMS SOLVED

Hundreds of "different", hence apparently impossible, problems — removing solvent from flannel impregnated with antiseptic... extracting delicate colloids from suspension... washing a floating metal — have been solved by special AT&M-designed centrifugals.

In hundreds of other cases, special centrifugal designs and recommendations from AT&M engineers have enabled men like yourself to get more from their centrifugals than they previously thought possible.

### RESULTS ACHIEVED

In one case, for instance, the power factor seemed out of line with production. AT&M engineers cut this manufacturer's filtration time in half... saved power, too... when they found he was running his centrifugals too fast

for best results. Four hundred times gravity, *rightly engineered*, did more than eight hundred could do.

### SAVINGS OF TIME, SPACE, CHEMICALS

Thirty per cent of a scarce chemical saved... unloading time cut from 7 minutes to 40 seconds... expansion of centrifugal equipment without increasing floor space — these are the kind of results you may be able to get after consultation with AT&M engineers.

### PLANNING TO WIN THE PEACE

"But we're too busy with war work to think about the future!" you may say. Yes, and rightly busy. Our engineers and facilities are also heavily pledged to war production. And yet, we must do the best we can to win the peace, the 2nd essential for victory. We will welcome the opportunity to place our experience at your disposal for future planning, as national needs permit, and in strict confidence. Write us, addressing 1425 Hyde Park Ave., Boston, Mass. — or 30D Church St., New York, N. Y.

# A. T. and M.

List Suggested AT&M Smooth operation with "out of balance" loads. An A T & M-designed link guarantees absolute minimum of foundation vibration. Fume-tight covers; spray pipes; specials.



Suggested AT&M For heavy chemical service. Self-discharging baskets, Twin-Speed Regenerative Drive for entire batteries, positive control — and all other accessories when specified. Laboratory units.



Base Bearing AT&M Motors built to A T & M's own specifications. Removable baskets, if desired. Closures cannot open while centrifugal is in use. Easily accessible brakes. Outer casing of solid iron or steel.



When inquiring specify CP8561... see information request blank, pgs. 2-3

## NEW LITERATURE

### Practical Suggestions on Operation And Maintenance

Simplified, practical discussions of prevailing problems both operation and maintenance are dealt with in new pocket-sized magazine issued by equipment manufacturer. Among the various subjects featured in most recent issue are: Trend to High Speeds, Motors & Drives in which importance of alloys is stressed and various maintenance pointers are offered. Decentralization of maintenance — zoning factories and placing a crew in charge of maintenance in each zone is also discussed in detail. Another feature is brief article with drawings concerning operation of mercury arc rectifiers. Still another article is in the form of an "Arc Welding Quiz" citing problems faced in every day welding and giving clear, practical directions for handling the situation. The wide range of interest served in this publication is evidenced by the final article giving a revealing survey of problems in bookkeeping imposed by dealing and determining depreciation in equipment. It emphasizes that in many of our industries 50% of the equipment will be 20 years old when the war ends. The name of this publication is "Operation & Maintenance Review."

ALLIS CHALMERS, Dept. CP, Milwaukee, Wis.

When inquiring specify CP8562, see information request blank, pgs. 2-3

### Variable Speed Controls Transmission, Vari-speed Motor Pulley, Vari-speed Motor Drive

New, 128-page-general catalog provides an unusually comprehensive presentation of a most complete line of variable speed control units. It contains many specific examples, illustrations, revised dimension diagrams and engineering tables. It shows in interesting, practical detail how variable speed control can be applied to all types of production machines to step up output and improve processing. Recent additions and improvements to these products, include a new reducer type transmission which provides speed variation and reduction in one compact unit, a junior unit for accurate speed control on light machinery and an improved differential unit. Specify Cat. G-435.

REEVES PULLEY CO., Dept. CP, Columbia, Indiana.

When inquiring specify CP8563, see information request blank, pgs. 2-3

### Storage & Mixing Equipment For Acids and Corrosive Chemicals

Storage and mixing equipment — tanks, jars, pots, trays etc., — for storage and mixing of acids and corrosive chemicals are described in an eight page illustrated bulletin. Complete specification tables and accompanying photos on which dimensions, construction details, position of outlets etc. are indicated by diagrammatic treatment make it easy to determine requirements. Installation and use of stoneware is discussed and the importance of proper support is stressed. Installations where high temperature and extreme shock is encountered also receive attention and recommendations made. Bulletin 404 on request.

U. S. STONEWARE CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8564, see information request blank, pgs. 2-3



Write for Your Copy  
of the  
New Beaver Catalog!

Profusely Illustrated  
Packed with Interesting  
and Useful Information

## BEAVER PIPE TOOLS

144 REVIEW AVE. WARREN, OHIO

When inquiring specify CP8505 — see information request blank, pgs. 2-3

# Equipment for Production

## Synthetic Rubber Transmission and Conveyor Belting

Now in production as replacement for the natural  
rubber product



SYNTHETIC BELTING

synthetic plant for processing. This method consists of  
the application of synthetic rubber being forced into pores

**Uses** — Designed  
to alleviate the  
shortage of trans-  
mission and con-  
veyor belting and  
to serve in such ap-  
plications as re-  
quired in shops,  
cotton mills, re-  
fineries and various  
industrial plants.

**Description** —  
Cotton fabric  
which forms the  
base of the prod-  
uct is made in  
various weights at  
the textile plants  
of the company  
and shipped to

of the fabric through the use of rollers. It is then fabri-  
cated into whatever sizes are necessary to meet the desired  
requirements. Further information regarding this product  
available upon request.

UNITED STATES RUBBER CO., Dept. CP, Rockefeller  
Center, N. Y.

When inquiring specify CP8507 — see information request blank, pgs. 2-3

## Chaser Grinding Fixture Holds All Sizes and Types of Dies

For easy mounting on table of any conventional  
tool and cutter grinding machine

**Uses** — For easy mounting on the table of any convention-  
al tool and cutter grinding machine. It is adjustable for  
any throat and rake angle desired.

**Features** — Accurate grinding assured by this fixture saves  
cost of replacing dies and chasers which are often ruined  
from lack of proper grinding or from too long use between  
grinds.

**Description** — It holds all sizes, makes and types of dies  
or chasers. Overall size of the fixture is 5 1/2 in. x 5 1/2 in.  
x 9 in. (unboxed) Net weight 25 lbs. Shipping weight  
35 lbs.

OSTER MFG. CO., Dept. CP, 2057 East 61st St., Cleve-  
land 3, Ohio.

When inquiring specify CP8508 — see information request blank, pgs. 2-3

## For Severe Corrosion Problems Use One Of The HASTELLOY ALLOYS—A, B, C, or D

These Are Some of The Corrosives They Resist		These Are Some of The Forms Available		These Are Some Ways You Can Work Them	
Media	Alloys	Forms	Alloys	Methods	Alloys
H <sub>2</sub> SO <sub>4</sub> , Dilute	A, B, C, D	Castings	A, B, C, D	Grinding	A, B, C, D
H <sub>2</sub> SO <sub>4</sub> , Concentrated	D	Welding Rod	A, B, C, D	Welding (Oxy-Acetylene)	A, B, C, D
HCl, Room Temp.	A, B, C	Rolled Sheet	A, B, C	Welding (Electric)	A, B, C
HCl, Boiling	B	Plate	A, B, C	Machining	A, B, C
Organic Acids	A, B, C, D	Welded Tubing	A, B, C	Cold-Forming	A, B, C
Acid Chlorides (Non-Oxidizing)	A, B, C	Bars	A, B	Hot-Forming	A, B
Acid Sulphates (Non-Oxidizing)	A, B, C, D	Forgings	A, B		
Oxidizing Media	C	Wire	A, B		
		Drawn Rod	A, B		

Hastelloy alloys A, B, and C  
compare in tensile properties  
to high-strength steels, while  
alloy D possesses high hard-  
ness and wear resistance.  
For more complete informa-  
tion on properties of these  
alloys, write for the book,  
**Hastelloy High-Strength Al-  
loys for Corrosion Resistance.**



## HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

New York 17, N. Y. UCC Kokomo, Ind.

CHICAGO—CLEVELAND—DETROIT—HOUSTON—LOS ANGELES—SAN FRANCISCO—TULSA

The word "Hastelloy" is a registered trade-mark of Haynes Stellite Company.

When inquiring specify CP8566 . . . see information request blank, pgs. 2-3

## You Can Say It With PRIDE "IT'S AN AURORA PUMP"

Type AD Hor. Split Case,  
Two Stage Centrifugal

Type OD Hor. Split Case  
Double Suction Single  
Stage Centrifugal

Type GMC  
Close-Coupled  
Centrifugal

Type GGU  
Side Suction  
Single Stage  
Centrifugal

NSA Aurora  
Centrifugal  
Sump Pump

**APCO TURBINE-TYPE PUMPS**—the  
simplest of all pumps. Ideal for  
small capacity, high head duties.  
Silent, compact and lasting.

APCO Single Stage  
Turbine-Type

APCO Horiz. Conden-  
sation Return Unit

DISTRIBUTORS IN PRINCIPAL CITIES

# AURORA

PUMP COMPANY

62 Loucks Street, AURORA, ILLINOIS

When inquiring specify CP8569 — see information request blank, pgs. 2-3



## PRODUCTION

### Compressors Play Vital Part in Manufacture of Explosives

*Provide pressure required for compressing air for oxidation of ammonia and refrigeration for regenerating used in removal of carbon monoxide and other steps in the process*

**Uses** — Special high pressure circulating compressors play an important part in the manufacture of synthetic ammonia, from which is recovered nitric acid for making explosives.

**Description** — The making of synthetic ammonia is called the "fixation of nitrogen" and involves many chemical and physical changes which are influenced by compressors. In the process of nitrogen fixation, it is necessary first to obtain a supply of gases in their free states. This is normally accomplished by burning natural gas in a reducing atmosphere or by the installation of a coke gas plant. The raw gas that is obtained from these plants normally consists of nitrogen, hydrogen, carbon-dioxide, carbon monoxide and certain other small impurities. It is necessary to remove all components, except the nitrogen and hydrogen from this mixture so that the two gases can be combined synthetically into anhydrous ammonia for fixation of the nitrogen. The carbon dioxide is normally removed under a pressure of approximately 200 pounds per square inch by means of scrubbing the gas through a water tower, with the carbon dioxide being absorbed in the water in a dissolved state. The carbon-monoxide is removed from the gas in a second scrubbing tower and under a pressure of approximately 2000 pounds per square inch by use of an ammoniac cuprous copper formate solution. After these gases have been removed the remaining product consisting of nitrogen and hydrogen is then compressed to a pressure of approximately 5200 pounds at which pressure it is exposed to a catalyst and through the addition of heat a chemical combination takes place resulting in a synthetic gaseous ammonia which is then condensed by refrigeration to an anhydrous ammonia state. Only a portion of the gas passing through the catalyst is actually converted to synthetic ammonia. It, therefore, is necessary, to install special high pressure circulating compressors to take the uncombined gases from the system after passing through the catalyst and is recompressed to a pressure equivalent to that of the raw gas being pumped to the catalyst chamber. A normal present day synthetic ammonia installation is designed for the production of 300 tons of synthetic ammonia per day and involves approximately 22,000 horsepower of high pressure compressors and circulators. In addition to this item, approximately 5000 horsepower compressor capacity is required to furnish the necessary refrigeration for regenerating the solution used in the removal of carbon-monoxide as well as for other steps in the complicated process. An additional amount of low pressure air at approximately 50 pounds pressure is further used in the regeneration and stabilization of the solution used for the removal of the carbon-monoxide. Synthetic ammonia is then used for the manufacture of nitric acid by burning the ammonia gas with air and the by-product being dissolved in water for the manufacture of nitric acid. This is normally made at a pressure of 50 pounds per square inch. The acid can be used to manufacture TNT, ammonia picrate and many other explosives. (This data furnished by Compressed Air Institute.)

COMPRESSED AIR INSTITUTE, Dept. CP, 2511 Terminal Tower, Cleveland, Ohio.



## How Can You Handle Something Without Touching It?

All over the world, Wilson Pulsafeeders are doing just that.

No legerdemain about it.

Superior design and competent engineering explain this phenomenon.

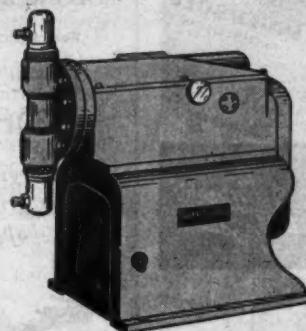
Government agencies and leading technicians recognize the accuracy, efficiency and dependability of these packless, positive displacement, piston pumps.

That is why thousands have been, and are being specified for varied and distant duty as well as for duty in Canada and throughout the United States.

**Efficiency** is assured through positive displacement and the simplification which is characteristic of all Wilson equipment.

**Accuracy** is guaranteed at better than 1/8 of 1%.

**Durability** results from absence of contact between operating parts and



**WILSON PULSAFEEDER**

the chemicals being handled—from absence of packing glands to cause loss and replacement shutdowns—from absence of breakable diaphragms to interrupt production and unnecessarily increase maintenance expense.

**Capacities** range according to one's need, from liquid flows of one cubic centimeter per hour to four-hundred gallons per hour without variation in accuracy.

**Flow Control** is manually adjustable to a constant, predetermined

rate of feed for mono or multi selections.

**For Chemical Proportioning**, Wilson Pulsafeeders are eminently superior.

**For Processing Industries**, including foods, they fill every requirement including easily maintained, sanitary cleanliness.

**For Research Laboratories**, they assure accurate, liquid measurement — facilitate ampoule filling, etc. which require positive results.

**For Water and Sewage Treatment**, they feed accurately such chemicals as hypochlorite, alum, soda ash, calgon, lime, iron salts, acids and ammonia.

**For Difficult Problems**, they offer the solution when either concentrated or dilute acids, volatile chemicals, slurries, either high or low viscosity and similar problem-liquids are involved.

Ad. No. K-5

### Your Inquiry...

for specific information concerning application and use of Wilson Pulsafeeders, will be answered in as much detail as your statement of requirements permits. With our reply, we will also send informative literature.

# WILSON

## CHEMICAL FEEDERS, Inc.

207 CLINTON STREET (P. O. Box 998) BUFFALO 4, N. Y.

EST. 1921 WITH EXPERIENCE IN ALLIED INDUSTRIES SINCE 1918

### ...Our Service

extends beyond production of chemical feeders for Processing Industries and Water Conditioning. It includes, because of acquisition of Clevon Products Co. (Est. 1903), production of Automatic Liquid Filling Machines.

When inquiring specify CP8570 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

When inquiring specify CP8571 . . . see information request blank, pgs. 2-3

Here's What  
"INGERSOLL  
STEEL"  
offers You!

Steel that Resists Corrosion  
...Steel that Resists Heat...  
and a Specialized Service in BOTH

In our steel mills we roll the size,  
gauge and number of sheets your job  
requires and deliver them in the shortest  
possible time under present day con-  
ditions.

Since we produce both Ingaclad Stain-  
less-Clad Steel, and Ingersoll Solid  
Stainless and Heat-Resisting Alloys, we  
are in a position to make unbiased recom-  
mendations as to the material best suited  
to, and most economical for any job.

Ask your Fabricator, or write—  
INGERSOLL STEEL & DISC DIVISION  
BORG-WARNER CORPORATION  
310 South Michigan Avenue Chicago 4, Illinois

Originators and Producers of

**INGACLAD**  
STAINLESS-CLAD STEEL

A  
Borg-Warner  
Product

When inquiring specify CP8573—see information request blank, pgs. 2-3

## Use Your Benjamin CATALOG 26

To Solve War Production Lighting Problems  
Or for Help on Post-War Lighting Plans

Look to your Benjamin Catalog 26 for the answers to  
your immediate and post-war industrial lighting and  
floodlighting problems. In it you'll find the complete  
data you need for proper specification of lighting equip-  
ment to meet the requirements of the seeing task as  
well as those of the location. Whether you require in-  
candescent, fluorescent or mercury vapor lighting units  
... for general, or localized lighting ... indoor, out-  
door, or hazardous locations ... you'll find your an-  
swer in Catalog 26. For those without a copy, a war-  
time reprint, just off the press, is available without cost  
or obligation. Write Benjamin Electric Mfg. Co., Prod-  
uct Information Dept. LL, Des Plaines, Ill.

**BENJAMIN**  
LIGHTING EQUIPMENT

Distributed Exclusively through Electrical Wholesalers

If You Haven't  
a copy  
SEND FOR  
YOUR FREE  
COPY TODAY

When inquiring specify CP8573—see information request blank, pgs. 2-3

## PRODUCTION

### Resurfacers For Belting, Various Rubber Products And Pulleys

Easily applied, dries quickly, one quart said  
to cover approximately 14 sq. ft.

Uses — For repair or rubber product and belting breaks,  
burnt, worn spots, filling holes and resurfacing. May be  
used on belts of all types: rubber, rubber composition,  
leather and cotton. Also for resurfacing metal, wood and  
composition pulleys.

Features — Great resistance to oil and grease. Little  
shrinkage. Spreads easily, dries smoothly.

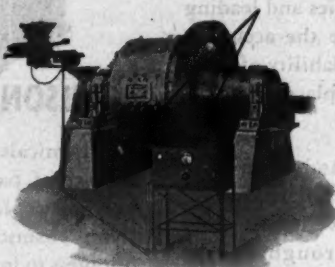
Description — Made of synthetic rubber. Consists of a  
cement primer and a mastic. Belt surface is roughened  
and primer applied. The mastic is then spread on. Avail-  
able in quarts, gallons and five gallons.

SOLO WORKS, Dept. CP, Loveland, Ohio.

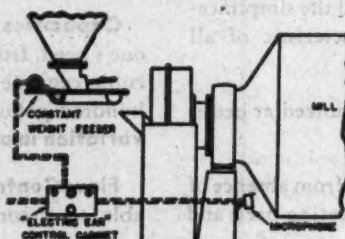
When inquiring specify CP8574—see information request blank, pgs. 2-3

### Tube Mills for Various Wet and Dry Grinding Applications

Metallurgical and cement; special pigments and  
filler grinding typical uses; standard sizes from  
approximately 4 ft. to 24 ft. lengths



MILL, FEEDER AND ELECTRIC EAR  
... microphone under mill picks up  
sound



ELECTRIC EAR CONTROLS ... con-  
stant weight feeder

in the mill eliminate most of the sliding contact which  
occurs in a straight head mill and which may produce  
excessive wear. Lining wear is reduced with the use of  
the conical heads. Truss like structure adds strength.

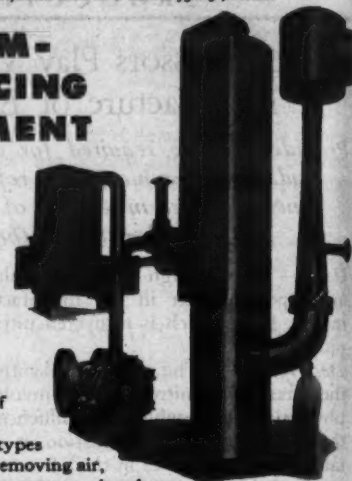
Description — The tube mill consists of a long steel cy-  
linder supported on hollow trunnions and driven by means  
of a spur or herringbone gear attached to one of the heads  
at either end and a pinion mounted on a separate crank-  
shaft, which in turn is connected to a suitable motor, either  
direct, through speed reducer or v rope drive. The tube  
is usually lined with quartzite brick or metal lining and  
is charged with flint or quartzite pebbles or steel balls. In

Uses — The tube  
mill finds its greatest  
application where a  
finely ground prod-  
uct in a single pass  
of the mill is de-  
sired and where  
power consumption  
is not of prime im-  
portance. It is pri-  
marily a regrinding  
mill as it will not  
take coarse feed.  
Metallurgical and  
cement applications.  
Where two or more  
materials of different  
specific gravities are  
to be ground to-  
gether and for spe-  
cial pigments and  
fillers the tube mill  
can be used to ad-  
vantage.

Features — Conical  
heads which deflect  
the mass of grinding  
media and material

Combination steam-jet and reciprocating vacuum  
pump equipment used in a humidifying process.

### VACUUM- PRODUCING EQUIPMENT



★ Steam-jet  
ejectors are one of  
the simplest and  
most economical types  
of equipment for removing air,  
gas or vapors from vacuum chambers  
in industrial processes. Ingersoll-Rand has a complete  
range of sizes for all capacities, and absolute pressures  
as low as 50 microns Hg. Ejectors will handle wet or dry  
mixtures, and can be designed to operate with practically  
any available steam pressure. Ingersoll-Rand also builds  
a complete line of other vacuum equipment including  
surface and barometric condensers, reciprocating dry  
vacuum pumps and steam-jet refrigeration units.

4-289

**Ingersoll-Rand**  
11 BROADWAY, NEW YORK CITY

When inquiring specify CP8576—see information request blank, pgs. 2-3

### Here's the Modern New Equipment you need— for faster Production at Lower cost

**INTERNATIONAL**

PORTABLE MIXERS MEDIUM AND HEAVY DUTY  
Modern Design, and many different types. Direct Drive  
Gear Motor. Slow-speed.

PERMANENT MIXERS With or without Tanks. Top or  
Side Entrance. Streams of the propeller or turbine type.

KETTLES, AUTOCLAVES, DIGESTERS  
BLENDERS, PEBBLE AND BALL MILLS

Send for  
Catalog

INTERNATIONAL PORTABLE MIXERS

INTERNATIONAL BLENDERS

INTERNATIONAL PERMANENT MIXERS

INTERNATIONAL ENGINEERING, INC.  
DAYTON, OHIO

When inquiring specify CP8576—see information request blank, pgs. 2-3





POSITIVE  
ACTION

SLOW  
SPEEDS

SELF  
PRIMING

NO CHURNING  
ACTION

ONLY TWO  
MOVING PARTS

## HOW TO SOLVE YOUR WARTIME PUMP PROBLEMS

MANY chemical process plants are finding Bump Pumps solve their wartime pumping problems, because of the superior features of Bump Pumps. Bump Pumps are positive displacement type that operate at slow speeds and are self-priming under high vacuums or against head pressures — delivering a constant volume per revolution that is not affected by speed or pressures. Bump Pumps have few parts and are economical in use and maintenance — easy to install and easy to maintain — backed by 13 years successful experience and service to the industry. Catalog upon request.

Sizes for every plant requirement

TAKE CARE  
OF THE  
PUMPS  
YOU NOW  
HAVE...

**The BUMP PUMP CO.**  
LA CROSSE ★ WISCONSIN

When inquiring specify CP8577 — see information request blank, pgs. 2-3

MAKES  
*Compressed Air*  
**COME CLEAN**

WATER, dirt and oil in compressed air lines can be a big source of trouble and expense—causing imperfect results, and deteriorating air hoses and equipment rapidly.

The Johnson-Gast Separator is the simplest way to make your compressed air come clean. It takes out more than 99% of all troublesome foreign elements, because it employs both of the accepted principles of separation—expansion and change of direction. The illustration shows its simple, sturdy construction. It can be used with equal efficiency on steam lines also.

When moisture in the air is vaporized by heat generated during compression, the Johnson-Gast Aftercooler is used to condense all vapor so the separator can remove it. Where every final trace of oil must be removed—no in paint spraying—the Johnson-Gast Oil Absorber is also used.

Write for bulletin showing sizes and capacities of the complete Johnson-Gast line of separating devices.

THE JOHNSON CORPORATION  
311 Wood Street, Three Rivers, Mich.

**JOHNSON-GAST**  
SEPARATORS • AFTERCOOLERS • OIL ABSORBERS

When inquiring specify CP8572 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

contrast to other types of ball or pebble mills the tube mill has a cylinder length anywhere from two to five times its diameter and is supplied with or without compartments as desired. Feed enters through one trunnion and is discharged through the other. Feed is introduced by a scoop or drum with internal scoop when the mill is used for wet grinding and by vibrating tubular, screw, conical or chute feeder when used for dry grinding. Feed size should be limited to minus  $\frac{1}{8}$  in. for best results in pebble tube mills and minus  $\frac{1}{4}$  in., in ball tube mills. Heads are made of plate steel or semi-steel with the trunnions riveted to the steel plate heads or cast integral with the semi-steel cast heads. Detachable trunnions can be furnished and the whole head readily removed from the cylindrical section from the cylindrical section to which it is fastened by means of the machined flange on the periphery. Discharge head may be provided with ports and water tight covers at the periphery for peripheral discharges. Where low pulp level but center discharge is wanted, grate with discharge lifters can be provided. Manhole covers replaced in the shell if required, although access is usually through the trunnions.

**Control of rate of feeding** — Rate of feeding must be closely controlled for maximum output and uniform product. Control must compensate for changes in the feed size, hardness, moisture and inadvertent changing in the normal feed rate. A sound sensitive instrument ("Electric Ear") automatically reduces or increases the rate of feed when the noise from the mill varies from a pre-determined level. (See illustrations.) Literature on this equipment on request.

HARDINGE CO., INC., Dept. CP, York, Pa.

When inquiring specify CP8570 — see information request blank, pgs. 2-3

**CARDOX**  
Fire Extinguishing  
Systems for  
**QUENCH TANKS**

QUENCH TANKS  
HOSE REEL  
TO OTHER HOSE REELS  
CARDON STORAGE UNIT

**Quick, Positive, Non-Damaging,  
Non-Contaminating Extinguishment**  
... achieved by the mass discharge of cold, inert Cardox CO<sub>2</sub>. Systems can be manually or automatically operated. After fire is extinguished, work can be resumed immediately without time out for clean up. Ample storage capacity of Cardox CO<sub>2</sub> provides a reserve for extinguishment even if several fires should occur in any one day. Write for Bulletin No. 9163

**CARDOX CORPORATION**  
Bell Building, Chicago, Illinois

When inquiring specify CP8580 — see information request blank, pgs. 2-3

**BOXES SEALED  
FASTER, EASIER!**



**FREE  
BOOKLET  
TELLS HOW**

**Silverstitchers DO IT  
...AND HERE'S PROOF!**



"Astounding results  
50% increased output  
—that's typical of the savings in cost and faster operation of Silverstitchers everywhere they are in use.

"Saves Two  
Operators"  
Says One  
General Supt.



**Designed to meet modern conditions.**  
Many Types—are made to fill varying needs. Here are some of the exclusive features only Silverstitchers can give you: Single pedal control—fewer moving parts—made for sturdy, quiet, trouble-free operation that appeals to operators and supervisors alike.

"Cuts Cost  
15%" Says:  
President of a  
Manufacturing Concern



**Use Silverstitch Stapling Wire for best results—a silvery, neat appearance—clitches tight and stays that way. Five and ten pound one-piece coils.**

**You'll Need a Priority.**  
Silverstitchers are available on ratings of A-9 or better when placed in conformity with Limitation order L-83.

**Get Latest Facts—Send coupon below for Free literature describing Silverstitchers—don't delay. Send coupon today.**

**ACME STEEL COMPANY**

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Branches and Sales Offices in Principal Cities

**FREE!  
MAIL  
COUPON**

ACME STEEL COMPANY  
2808 Archer Avenue, Chicago, Illinois  
I'm interested in faster and easier box stitching at lower cost. Please send me the FREE folder with all the facts.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify CP8581 — see information request blank, pgs. 2-3

## In your post-war planning INVESTIGATE SPRAY DRYING

Use of spray dried foods for military and lend-lease purposes has proven both convenient and economical. From this experience, a vast civilian market will emerge after the war. Concerns using Douthitt Gray-Jensen equipment will be in a strong competitive position because of the superior quality of their products and their low production costs. It will pay you to investigate now.

**DOUTHITT GRAY-JENSEN**  
SWENSON EVAPORATOR CO. DIVISION OF WHITING CORPORATION  
227 No. La Salle St., Chicago 5, Ill., U. S. A.

When inquiring specify CP8582 — see information request blank, pgs. 2-3

## SAVE MAN-POWER Use DRACCO PNEUMATIC CONVEYORS

Write  
for  
Bulletin  
No. 526



There are many ways in which DRACCO Pneumatic Conveyors save money — perhaps the most important is reduced labor cost. In most installations ONE man and a DRACCO Pneumatic Conveyor does the work formerly done by SEVERAL men. If you move chemicals or granular materials from receiving point to storage or from storage to point of operation, why not find out what DRACCO Engineers can do for you? They have reduced handling costs to the MINIMUM for many.

Write for Bulletin No. 526

**DRACCO CORPORATION**  
4060 East 116th Street, Cleveland 5, Ohio New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

When inquiring specify CP8583 — see information request blank, pgs. 2-3

Page 58

## PRODUCTION

### Inert Gas Generators For Low Cost Purging, Blanketing, Evaporation

*Gas or oil fired; for inert gas requirements where inflammable gases or liquids must be handled*

**Uses** — Purging stills, tanks, furnaces; blanketing tanks, grinders, pulverizing machines to prevent dust explosion; for agitation, evaporation and transfer of solutions by pressure methods without presence of oxygen; with mixers, ovens, dryers and similar equipment where materials and conditions involve hazardous conditions. Applications in gas, steel, oil industries, as well as producing purging gas, process nitrogen for ammonia plants, for producing nitrogen using ammonia or hydrogen as fuel.

**Features** — Large capacity in proportion to weight and cost. Burn gas or oil. Adjustments for complete combustion easily made. Readjustments for same fuel not necessary after shutdown. Quiet operation. Variations in back pressure do not affect volume of operation. Combustion at low pressure, no difficulty with corrosion.

**Description** — Flame type, producing inert gas as result of fuel burned. Combustion chamber and spray cooler of welded steel. Air and gas, or oil are pumped separately, without mixing, until they reach combustion chamber. Combustion takes place under pressure. Products of the combustion process are forced out to the point of use at pressures up to 3 lbs. psi. Automatic flame or cooling water failure controls. Choice of gas, electric motor or steam power. Heart of unit is rotary positive blower and gas pump, direct connected. No sensitive proportioning instruments required. Flexibility permits changes in inert

## NEW BOOKLET

ON  
SAFE  
MIXING

Pneumix air motor agitators are operated by compressed air. These are safe to use on the most flammable materials.

This new booklet contains pictures of application in many plants throughout the country; a complete catalog and price list.

Send For  
Your Copy



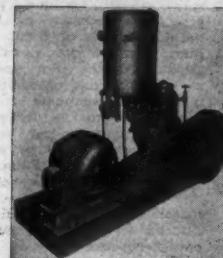
**ECLIPSE AIR BRUSH CO., INC.**

393 Park Avenue, Newark 7, New Jersey



When inquiring specify CP8584 — see information request blank, pgs. 2-3

## KINNEY vacuum pumps for the Laboratory



### Single Stage Dry Vacuum Pump

Laboratories today must have **DEPENDABLE** means for maintaining high vacuums; the accuracy of tests, sometimes involving days of work, depends directly on the performance of the vacuum pump. Precision built, the Kinney Vacuum Pump of Single Stage type will exhaust to an absolute pressure of .01 m/m or better, the Compound type to .0005 m/m or better. Kinney Vacuum Pumps are ideal for filtering, distilling, testing, impregnating, and many other laboratory and process uses.

Ask for descriptive Bulletin 18  
We also manufacture liquid pumps — plain pattern and steam jacketed, strainers, clutches and cut-off couplings.

**KINNEY MANUFACTURING CO.**

3573 Washington St., Boston 30, Mass.  
New York Chicago Philadelphia Los Angeles Seattle

When inquiring specify CP8585 — see information request blank, pgs. 2-3



## We've Spilled the WORKS!

**All the works**—two discs and two wedges—only **four parts**—the entire working part assembly of a Darling Double Disc Gate Valve. Any part can be replaced quickly and inexpensively without removing the valve from the line.



Darling Gate Valves come in Fully Revolving Double Disc Parallel Seat, also in Taper Seat — Slotted and Solid Wedge types. In service pressures up to 3000 pounds they are available in Cast Iron, Bronze, Forged Steel, Cast Steel and Corrosion Resistant Alloys.

Wire or Write for Full Information.

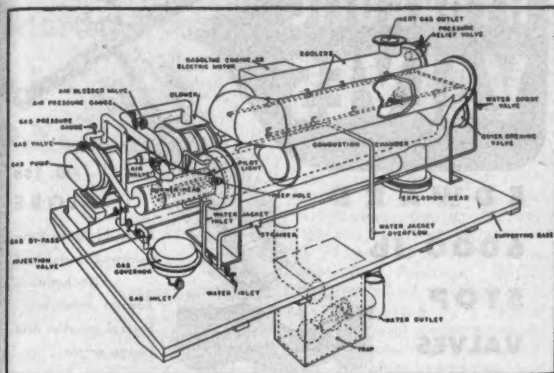


When inquiring specify CP8586 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION



TYPICAL INERT GAS GENERATOR INSTALLATION

gas analysis. Observation of flame through peep sights permits maintenance of flame at desired color, and together with regular analysis permits close control of inert gas. In standard arrangement, inert gas is cooled in a horizontal spray cooler by direct contact with cooling water as shown in drawings. When inert gas cannot be used direct as produced, gas generated may be stored in high pressure tanks and drawn off under low pressure as needed. Literature and information regarding this equipment as it may be applied to specific operations on request.

ROOTS-CONNERSVILLE BLOWER CORP., Dept. CP, Connersville, Ind.

When inquiring specify CP8587—see information request blank, pgs. 2-3

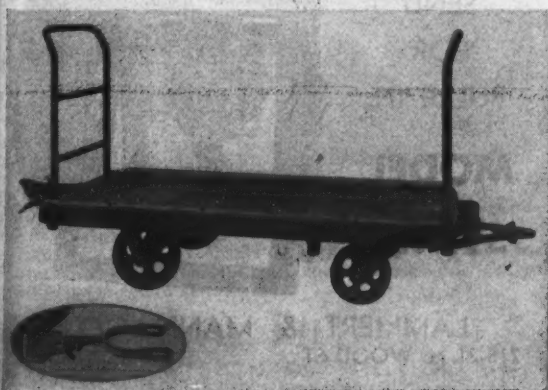
## All Purpose Industrial Trailer

Reinforced frame, hardwood floorboards, Hyatt bearings, high pressure lubrication

Uses — Designed for all purpose industrial trailer service. Description — Racks are interchangeable on sides and ends. Automatic hitch is standard, although the manually operated type may be furnished as optional equipment. Frame is of 3 in. x 2½ in. x ⅜ in. T iron, reinforced by 2 in. x 2 in. x ⅜ in. longitudinal angles. Floorboards are of selected seasoned 1½ in. hardwood (dressed) . . . rear axle is SAE 1045 carbon steel. Rear axle brackets, as well as all other castings are of cast steel. Diameter of caster wheel is 10 in. with a 3 in. face. Rear wheels 12 in. with 3½ in. face. All equipped with Hyatt bearings and high pressure lubrication.

H. L. PITCHER CO., Dept. CP, Strathmoor & Fullerton, Detroit, Mich.

When inquiring specify CP8588—see information request blank, pgs. 2-3



AUTOMATIC HITCH TRAILER—(insert manual hitch)

JANUARY-FEBRUARY, 1944

## DODGE GROUP DRIVES BOOST

# Battle Power



### "SHARE-THE-RIDE" Principle in POWER TRANSMISSION

Modern Dodge Group Drive applies share-the-ride principles to horsepower delivery. Taken from its source, capacity power, over short power "roadbeds," is delivered enroute to a group of production machines. Group drive permits one motor to do the work of several (a powerful advantage in these war days when conservation of materials and manpower is so vital).

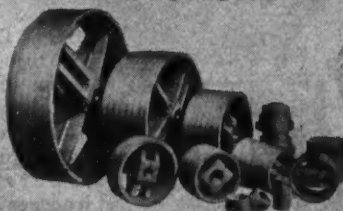
Dodge Group Drive puts all the power in the job . . . boosts battle power, hastens Victory! By reducing connected horsepower, conservation is assured in motors, wiring, controls and other critical equipment and materials. Initial cost is low . . . fixed charges and maintenance costs are reduced. Cost of horsepower-delivery drops.

In the complete Dodge line are all the component parts for group drive . . . shaftings, hangers, pulleys, bearings, clutches . . . as well as individual motor drives, including D-V Matched Quality V-Belt Drives.

Contact nearest Dodge Distributor or write

DODGE MANUFACTURING CORPORATION, Mishawaka, Indiana, U.S.A.

### DODGE VICTORY WOOD SPLIT PULLEYS



Great tractive pull . . . long belt life . . . power saving. Balanced. Interchangeable bushings (for various sizes of shafts). Compression fastening to shaft. Easy to install. Light weight. They conserve metal!

Throw all your  
Scrap into the fight!

Buy More  
War Bonds

# DODGE

MISHAWAKA

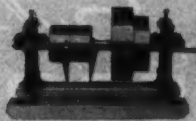
THE RIGHT DRIVE FOR EVERY JOB

## PUT ALL YOUR POWER IN THE JOB

When inquiring specify CP8589 . . . see information request blank, pgs. 2-3

### DODGE SHAFT HANGERS

Shown here is the Dodge 4-point Pressed Steel Drop Hanger which may also be used as a Post or Bracket Hanger. 3-point and 4-point Iron Hangers also available.



### DODGE COUNTERSHAFTS

Can be supplied to meet any specifications with the proper type of hangers, bearings, pulleys and clutches to meet any requirement.

### DODGE-TIMKEN Hanger Bearings

A completely assembled, factory adjusted, pre-lubricated unit delivered ready to install. Effectively sealed against admission of dirt or loss of lubricant.



### DODGE STEEL SPLIT PULLEYS

Strong, rugged, light in weight. Easy to erect. Grooveless oval crown permits low belt tension—saves power. Also wood and iron pulleys for every service.



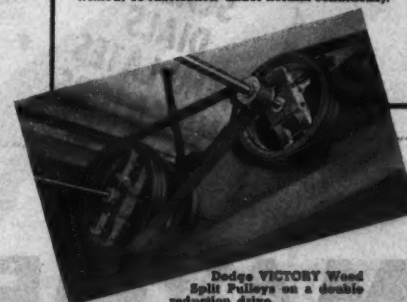
### DODGE FRICTION CLUTCHES



The Dodge Solid Friction Clutch shown above is particularly adapted for modern group drives and general power transmission service. Other types and sizes up to 1500 HP. at 100 R.P.M.

### DODGE-TIMKEN PILLOW BLOCKS

For power transmission or machinery applications. Completely assembled, factory adjusted, seals exclude dust and dirt and retain lubricant. Easy to install. Long life (30,000 hours of service under conditions for which they are adapted) . . . (good for 50 million revolutions without re-lubrication under normal conditions).



Dodge VICTORY Wood Split Pulleys on a double reduction drive.



**Syl-O-ette  
PROCESS**

## FOR PRECISION REPRODUCTION

WE REPRODUCE to your specifications or from your master art-work, scales, dials, templates, indicators, diagrams, etc., requiring a bold silhouette of extreme contrast.

Easily read numerals and graduations with no confusing background glare.

Continuous scales are made in standard lengths up to 100 inches. Special sizes and shapes available.

Materials adaptable to the applications of Syl-O-ette Process includes plain or coated flat surfaced metals, plastics and other stable surfaces.

Economical in production of small or large quantities.

Precision reproduction of all linear dimensions is assured even in the greatest lengths. Sample submitted for your inspection and test to destruction.

**SCALES  
DIALS  
TEMPLATES  
INDICATORS  
DIAGRAMS**

**MAYMER  
CORPORATION**  
10910 Berea Rd., Cleveland 2, Ohio

When inquiring specify CP8590 — see information request blank, pgs. 2-3

## PRODUCTION

### Filler For One Point Handling of Empty and Filled Containers

*Requires only one worker to operate; has no container — no fill automatic control*

**Uses** — This automatic filling machine is designed for handling wide variety of dry materials including foods.

**Features** — Especially desirable in operations where it is necessary for the intake of empty and the delivery of filled containers to be at the same point. Saves labor as one worker can handle the entire operation. Also, this filler is provided with a no container no fill control which automatically prevents discharge when supply of containers is exhausted.

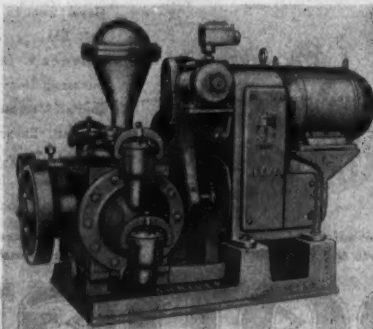
**Description** — The filler is built in a range of sizes capable of handling from 1 oz. to 24 oz. Any of the models will handle a maximum of one and one half times the minimum. Production is from 40 to 60 containers per minute. Overall height is 6 ft.-6 in.

TRIANGLE PACKAGE MACHINE CO., Dept. CP, 906 N. Spaulding Ave., Chicago, Ill.

When inquiring specify CP8591 — see information request blank, pgs. 2-3

### Latex Pump Reduces Coagulation, Cleaning; Gives Smooth Discharge

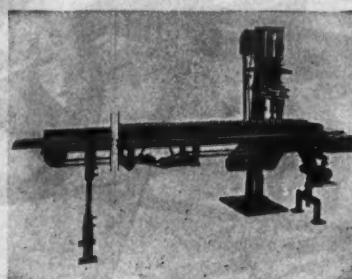
*Activating mechanism of pump not in contact with fluid; latex expelled without aeration, turbulence*



LATEX PUMP with vari-speed drive

**Uses** — Designed for the difficult service of pumping latex (both natural and synthetic) involving its persistent tendency to coagulate on exposure to air (and a similar tendency, speeded and intensified in the presence of air) when any agitation takes place. Now in service in synthetic plants. At the present time these pumps are used primarily at the stage where latex is made from butadiene and styrene. In some plants the pump is being used to transfer blended latex into subsequent coagulating processes.

**Features** — Activating mechanism of pump does not come



FILLER has 2 way conveyor

## HYDRAULIC VALVES

**EDWARD  
6000 lb  
STOP  
VALVES**



FIG. 158  
GLOBE

Sizes 1/4 in. to 2 in.  
Screwed ends  
or Socket ends  
Forged steel body  
Swivel needle disk  
Inside screw . . .

For general industrial hydraulic service and other services where stresses are of indeterminate magnitude, and temperatures are below 300 F. Rated at 6,000 lb at 125 F, Edward Fig. 158 globe stop valves have wear-resistant EValloy (stainless steel) seats, swivel needle disks and stems, large knobbed handwheels for easy operation, and inside screw construction for maximum packing life.

Send for free Catalog 101 today!

THE EDWARD VALVE & MFG. CO., INC.  
1230 WEST 145th STREET • EAST CHICAGO, IND.

**Edward Valves**  
*Forged Steel & Cast Steel*

When inquiring specify CP8592 — see information request blank, pgs. 2-3

## LAMMERT ROTARY

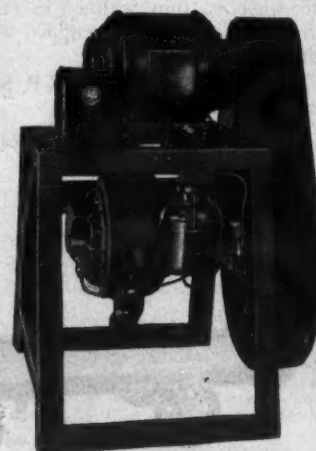
## VACUUM PUMPS

VACUUM TO 0.02 MM. OF BAR.

MODELS FOR 3-580 C.F.M.

**NEW!**

SEND  
FOR  
BULLETIN  
**MODEL  
SWMF.**



LAMMERT & MANN CO.  
215-21 N. WOOD ST CHICAGO 12

When inquiring, specify CP8593 — see information request blank, pgs. 2-3



## Look at the Inside Strands

when you buy

## PACKING

Ordinary packings are merely dipped in lubricant after braiding, plaiting or twisting. The result . . . such packings soon lose their lubricating quality, dry out, and score the rod, shaft or stem. Not so with PALMETTO and the other G-T Self-Lubricating Packings. EACH INDIVIDUAL STRAND of these packings is separately impregnated by a special lubricant, while hot and under pressure, BEFORE braiding, plaiting or twisting. G-T Packings therefore come to you literally SATURATED with lubricant. That's why these packings remain soft and pliable for long periods . . . protect shafts, rods and stems . . . reduce annual packing expenditures and stuffing box maintenance costs. You are SAFE when you buy G-T Packings, and there's an exactly suitable style for every fluid.



**TWISTED**  
For valve stems, each strand a perfect piece of lubricated packing.



**BRAIDED**  
For rods and shafts; layer over layer construction insures uniformly even bearing surfaces.

**Greene, Tweed & Co.**

Brant Blvd. at 238th St., New York 66, N. Y.

**PALMETTO**

for steam, hot water, air.  
PALCO for water. PEERO for oils. CUTNO for alkalis.  
SUPERCUTNO (blue asbestos) for acids. KLERO for foods.

Self-Lubricating **PACKINGS**

When inquiring specify CP8594 — see information request blank, pgs. 2-3

## SWENSON - LEVAL Clarification

# FILTERS

with fully mechanized cleaning



Filter thru  
Stone...

No cloths or  
pads to change

New construction principle... Filterstones form a rigid support for the filter-aid precoat, a guarantee of clear filtrate. Note large cake space provided. Dry cake discharge if desired.

Cleaned by Stripping Sprays that vigorously wash every inch of filter area. No dismantling. No messy hand labor. Bulletin 7-103 gives range of sizes.

**LEVAL FILTERS**

SWENSON DIVISION OF WHITING CORP.

District engineers in 26 principal cities

927 Wrightwood Ave. CHICAGO 14, Illinois

When inquiring specify CP8595 — see information request blank, pgs. 2-3

JANUARY • FEBRUARY, 1944

## PRODUCTION

into contact with the fluid being pumped. A rubber diaphragm at each end of the double acting mechanism seals off the piston proper from the liquid ends. Thus there are no packings which can allow entrance of air into the liquid ends on the suction stroke. Although some coagulation and deposition takes place, it has been so greatly reduced that the necessity for cleaning is much less frequent and such operations are made quickly and easily.

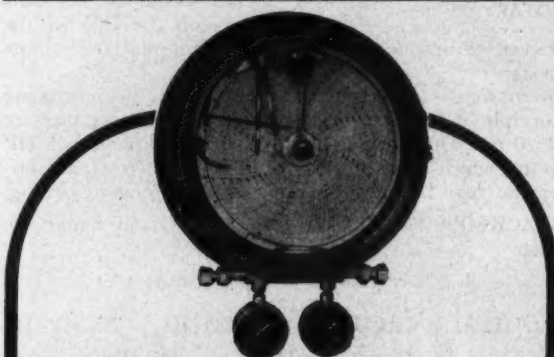
**Application** — Latex from the polymerizing vessels is transferred to blow down tanks and thence to flash tanks where the pressure built up in the polymerization reaction is dissipated. These pumps then move the latex from the flash tanks, (which are under vacuum) to the styrene recovery towers and pump it from these towers to blending vats.

**Operation** — Entire liquid end of pump is completely filled with latex at end of suction stroke. Pressure stroke is the result of the action of the piston against the rubber diaphragm. There is no occlusion of latex between the piston and the walls of the cylinder. (Even where the clearance between the piston and cylinder in piston pumps there is induced turbulence which causes premature coagulation, though rubbing action is less.) The pressure stroke of this new diaphragm pump expels latex in smooth volume without aeration or turbulence.

**Description** — Photo shows duplex diaphragm pump — 45-50 gpm, with metal parts which contact the latex coated with a synthetic resin enamel. It is equipped with variable speed motor drive. In sizes 1-100 gpm with liquid exposed parts of any metal or alloy, rubber covered or enamel coated. Pressures to 100 psi.

T. SHRIVER & CO., Dept. CP, 846 Hamilton St., Harrison, N. J.

When inquiring specify CP8596 — see information request blank, pgs. 2-3



## POSITIVE ACTION...

Closer Temperature Control!

There's a clear-cut engineering reason for the superior control furnished by Foxboro On-Off Temperature Controllers. Their simpler, sounder design produces positive control action for slightest temperature changes. No throttling effect... no frictional lags... no lost motion!

Sturdily constructed... pneumatic operation... filled-type thermal system. Automatic direct-connected recording unit gives continuous accurate records, free from detent action.

Write for complete Bulletin 225-2. The Foxboro Company, 190 Neponset Ave., Foxboro, Mass., U. S. A. Branches in principal cities of U. S. and Canada.

**FOXBORO**

TEMPERATURE  
CONTROLLERS

When inquiring specify CP8607 — see information request blank, pgs. 2-3

For your new stainless steel and alloy processing units in gauges up to 3/4" thick — we offer design and engineering cooperation, specialized plant facilities, manpower especially trained to work with stainless steel and alloys in light to medium gauges. Some production facilities are available now for wartime work.

**CONSULT WITH US!**



Jacketed Kettle Still — Hand-hole and column flange, with or without agitators. Plate 7015.

## STAINLESS STEEL AND ALLOY PROCESSING EQUIPMENT

IN GAUGES TO 3/4" THICK

AGITATORS  
AUTOCLAVES  
BLENDERS  
COLUMNS  
COOLERS  
CONDENSERS  
DEHYDRATING  
EQUIPMENT  
DIPPERS  
DRYERS  
EVAPORATORS  
HEAT EXCHANGERS  
KETTLES  
LININGS  
MIXERS  
PAILS

PANS  
PIPING  
PRESSURE VESSELS  
RACKS  
SCOOPS  
SCREENS  
SINKS  
TABLES  
TANKS  
TOWERS  
TRAYS  
TROUGHES  
TRUCKS  
TUBING  
VATS

All orders subject to government  
priority regulations



Alloy Piping — Stainless steel welded process piping with built-up Van Stone joints. Plate 7079.

Heat Exchangers — Condenser shell. Plate 7109.



Heat Exchangers — Stainless steel tube bundle for condenser. Plate 7108.

**S. BLICKMAN, INC.**  
711 GREGORY AVE., WEEHAWKEN, N. J.  
TANKS • KETTLES • CONDENSERS • AGITATORS • EVAPORATORS • PANS • VATS • COLUMNS • PIPING

When inquiring specify CP8598 — see information request blank, pgs. 2-3

## DOMINATED SHIPPING SHOW!

At the national Army-Navy Requirements Conference, Chicago, sponsored by TAPPI, the over-seas sealing-tape featured in 16 exhibits was →

# MYSTIK

Self-Stik Cloth Tape

## WATERPROOF!

This sensationally superior pressure-sensitive safe-sealer is now available to every industry! Whatever you make or ship—

**SEND FOR FREE TRIAL SAMPLE NOW**

Test for yourself Mystik's startling advancements in safeguarding metals, foods, fabrics in transit. Also test its utility in countless plant problems!

**MYSTIK TAPE DIVISION**

CHICAGO SHOW PRINTING COMPANY

2635 No. Kildare Ave. Chicago, 41

When inquiring specify CP8590 — see information request blank, pgs. 2-3

## STOP Liquid Splashes-Sparks Flying Particles and Dusts

WITH THESE MODERN SAFETY DEVICES

★ There is no "give" in this Cosco No. 750 General Utility Face Shield, which accounts for its ability to "take" and repel splashes, sparks and flying particles in the chemical process and metal fabricating industries. Extremely light in weight, with entire window metal bound for added strength and rigidity.

**COSCO No. 750  
FACE  
SHIELD**

enables its wearer to proceed aggressively, confident of working with the utmost in face and eye protection and comfort.

**New Cosco No. 94 RESPIRATOR**

Here is a respirator that FITS better, offers more COMFORT to the wearer! Carries a new Approval by the U. S. Bureau of Mines (No. 316-2142) for protection against Type A (Silica) — Lead and Manganese Dioxide. Unusually large filtering area (40 sq. in.) promotes easier breathing. New Exhaust Valve with speaking diaphragm permits a normal exchange of conversation. Functions with a high degree of efficiency against all common dusts, making it unnecessary to change filters under average working conditions. Get special circular today. Write.

Cosco No. 94 Respirator

**CHICAGO EYE SHIELD CO.**

2337 Warren Blvd.  
Chicago 6 Illinois

When inquiring specify CP8600 — see information request blank, pgs. 2-3

Page 62

## PRODUCTION

### Rotary Pump Has Unique Mounting

Mounted vertically on base of bracket which supports motor permitting easy access for service



ROTARY PUMP . . . bracket mounted

bracket, permitting free access for lubrication and adjustments.

**Description** — Operates on "bucket design" swinging vane principle. Capacity 50 gal. per min. at discharge pressure of 20 psi. Direct connection by flexible coupling to 3 HP motor which drives pump at 870 rpm. Internal anti-friction type bearings, split gland for ease in repacking. **BLACKMER PUMP CO., Dept. CP, Grand Rapids, 9, Mich.**

When inquiring specify CP8601 — see information request blank, pgs. 2-3

### Central Vacuum Cleaning Systems For Industrial Plants; Buildings

For floors, walls, structures, containers; provides for recovery of valuable industrial dusts

**Uses** — These central vacuum cleaning systems are especially designed to meet the requirements of large industrial plants and buildings. Tools are made in many types to meet specific conditions encountered in various plants and buildings. Separators and cleaning tools provide thorough, labor saving means of cleaning floors, walls and equipment, as well as rafters, ledges, pipes.

**Features** — Reduce fire and explosion hazards and improve working conditions. Clean atmosphere prolongs life of machinery. Where industrial dusts have high salvage value they can be reclaimed and reused.

**Description** — A typical installation consists of a vacuum producer or centrifugal exhaustor which produces the necessary suction and operates at low maintenance cost; a separating system consisting of a secondary separator and filter tank which removes the fine dust particles from

**Uses** — Design and operating features of this rotary pumping unit (Marine type) indicates its application in many industrial processing operations. Performance demonstrated in handling Navy lubrication oil and liquids of similar properties and characteristics. Also suitable for use as original equipment on some types of liquid processing machinery.

**Features** — Unique method of mounting. Motor is supported by a bracket or shelf made of welded steel plate and bolted to a bulkhead. The pump is mounted vertically on the base of the

# Tomorrow Too!

**CLARK**  
FORK TRUCKS  
will Serve Industry  
and Save Manpower  
in Material Handling



BUY  
MORE  
BONDS

**CLARK TRUCTRATOR**

DIVISION OF CLARK EQUIPMENT COMPANY

BATTLE CREEK, MICHIGAN, U.S.A.

When inquiring specify CP8602 — see information request blank, pgs. 2-3

Protect **POWER Flow**  
IN YOUR PROCESSING PLANT!  
HEAT MOISTURE FUMES DIRT



**FLEXIBLE  
COUPLINGS**

Insure full transmission of your power stream with L-R Couplings for every duty. Non-lubricated.

# L-R

**Resist**  
Heat  
Moisture  
Corrosive Fumes  
Temperature  
Changes

**Correct**  
Misalignment  
Whip and  
Backlash, and  
take up  
Shock, and Drag

Send for Complete L-R Catalog and  
Selector Charts

**LOVEJOY FLEXIBLE COUPLING CO.**

4967 WEST LAKE STREET

CHICAGO 44, ILL.

When inquiring specify CP8603 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

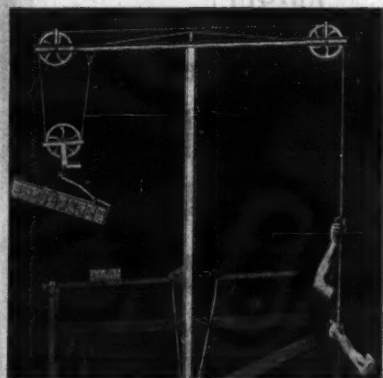
the air stream and permits only the clean air to pass through the exhaust into the atmosphere. If large quantities of dust are to be collected, a primary separating tank is also furnished. Also furnished is a complete set of cleaning tools, especially suitable for the required type of service, flexible suction hose. Only standard piping and fittings are required. Vacuum producer is of rugged, simple design. There are no valves, gears or cams and no safety valve or relief control of any kind is required as the machine is inherently self-governing. Casing is of heavy sectional cast iron construction, accurately machined to fit, with air tight interlocking notched joints. Only moving part is the impeller assembly which is accurately machined and statically and dynamically balanced to operate without noise or vibration. Secondary separator provides two-fold separation in a single unit on the suction side of the vacuum producer. Heavier duty is precipitated in lower compartment by centrifugal action and reduced air velocity then passes upward through filter bags in upward compartment. Primary separator is not equipped with bags and utilizes baffles and centrifugal action. Bulletin gives specifications covering systems ranging from 5 to 100 HP. It also illustrates and describes briefly portable vacuum cleaning units.

ALLEN BILLMYRE CO., Dept. CP, 431 Fayette Ave., Mamaroneck, N. Y.

When inquiring specify CP8604 — see information request blank, pgs. 2-3

### 1 Man Hoist Unloads Automatically Light Weight, And Portable

*Designed for use with brick, tile, etc., but can be used on objects to which rope or wire bail can be affixed.*



ONE MAN HOIST

**Uses** — Light-weight portable hoist for handling a variety of materials. Designed primarily for wide range of construction and repair jobs its adaptability and operating ease indicating its usefulness with numerous products or objects to which a rope or wire bail can

be affixed can be hoisted and unloaded. Moves brick, tile, mortar, flue lining etc.

**Features** — One man operation with automatic unloading. Vise-like clamp permits easy installation on scaffold. Light weight — 80 lbs.

**Description** — Hoist is composed of two units which weigh 34 and 46 pounds respectively. Capacity load is 250 lbs. One man can handle 100 lbs. of material. Design of tongs provides for instant and precise automatic release of load. Uses  $\frac{3}{8}$  in. rope. Descriptive literature on request.

CLIPPER MFG. CO., Dept. CP, 4030 Manchester St., St. Louis, Mo.

When inquiring specify CP8605 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

# TOWERS of Strength

... towers of strength  
on the road to victory

... towers of promise  
for a triumphant tomorrow

... towers of achievement  
that point upward like  
great fingers of prophecy to a  
new era of Petro-Chemicals.

A salute to the men of  
the chemical industry! whose  
research, resourcefulness and  
sweat is contributing so much  
toward victory and security.

The Durametallic Corporation  
is proud to play a part  
in this important industry by  
providing packings and mechanical  
seals "Designed For  
The Need" in the sealing of  
processing equipment.

BUY U. S. WAR BONDS AND STAMPS

**DURAMETALLIC CORPORATION**  
KALAMAZOO MICHIGAN

CHICAGO • DALLAS • DETROIT • FREDERICKSBURG, VA.  
HOUSTON • KANSAS CITY, MO. • LOS ANGELES  
MONTREAL • NEWARK • NEW ORLEANS • SAN FRANCISCO • SEATTLE • TULSA • YOUNGSTOWN, OHIO

**The PERFECT SEAL**

When inquiring specify CP8606 . . . see information request blank, pgs. 2-3

# Industrial Propellers

## FOR MIXING or AGITATION

The MICHIGAN WHEEL line with its exceptionally long range of sizes, patterns and available metals offers by far the most logical and economical source of propellers for every conceivable industrial use. They are widely used on original mixing equipment, in replacement and special application. All are made by the exclusive MICHIGAN MACHINED-PITCH method which assures perfect pitch, perfect spacing and balancing, and hence smooth, vibrationless operation. They are available in bronze, cast steel, Monel, Stainless Steel, cast iron, aluminum, etc., to suit specific requirements. Engineering assistance with detailed information will be furnished promptly on request.

3 BLADE MODELS IN DIAMETERS of 3 Inches to 3 Feet  
2 BLADE MODELS IN DIAMETERS of 3 Inches to 18 Inches

### MICHIGAN WHEEL CO.

230 Market Ave., S. W. Grand Rapids, Mich.

When inquiring specify CP8607 — see information request blank, pgs. 2-3

## PRODUCTION

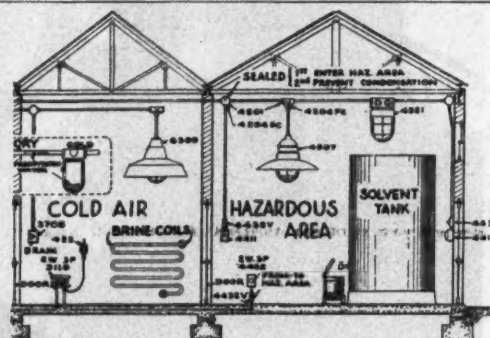
### Corrosion Resistant Plastic in All Types of Processing Units

*Properties can be modified to suit various applications, pipes, tanks, fittings and equipment*

**Uses** — Tanks, trays, pans, pipes, fittings, ducts, troughs, cylinders and other conventional processing units for wide range of applications, particularly where corrosion resistant service is imperative.

**Features** — This plastic material is being made into parts and equipment can be modified to suit various applications. High tensile strength. Can be used continuously in temperatures up to 270 degrees F. It has a hard smooth finish.

**Description** — This plastic (Corresite) is a combination of glass fabric and chemically resistant resin. It is corrosion resistant to a wide variety of reagents and has high mechanical strength. Available in the form of tanks, pipes, fittings and conventional processing units. Suitable for structural parts. Made in different grades and properties can be modified to suit various applications. Products are built up over forms and sections and various thicknesses can be obtained. This plastic is not affected by water or atmospheric conditions and shows no deterioration with age. It is chemically resistant to these solutions: Acids: acetic, benzoic, boric, chlorosulfonic, citric, lactic, phosphoric, sulphuric (dilute), tannic, tartic and others. Salts: alum, ammonium carbonate, calcium carbonate, ferric salts, nickel sulphate, potassium carbonate, sodium bicarbonate, sodium chloride, zinc sulphate and others. Organic products: benzol, carbon tetrachloride and others, also ammonia, salt brine and salt water. It has low electrical and thermal conductivity and is light in weight. Specific gravity is less



*Insure*

### ALL HAZARDOUS AREAS

The layout above shows how four R&S explosion-proof products meet the most exacting demands of safety in an extremely hazardous area.

**WHEN YOU PLAN OR REMODEL** a building, an outdoor installation, a ship or an electrical machine, it is not always possible to pre-determine the hazards it will encounter during its long life of service. With R&S, the electrical system can be made vaportight, dust-tight, moisture-proof, waterproof or explosion-proof — or all five if necessary. And R&S Ever-Lok wiring devices will prevent accidental interruption of service for the life of the job.

Since 1902



**RUSSELL & STOLL COMPANY**  
EXPLOSION-PROOF WATER-TIGHT AND EVER-LOK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES  
125 BARCLAY STREET • NEW YORK 7, N. Y.

When inquiring specify CP8608 — see information request blank, pgs. 2-3

## Install UNIT HEATERS and BLAST SECTIONS



*That will stand wear as long as the pipe furnishing steam or hot water to them!*

Cast iron series GRID Unit Heaters are built to last, not just for the duration, but built to last for years — to last longer than other types of heating equipment. In many installations this means GRID Unit Heaters will last as long as the building itself. They will have the same high efficiency in years to come as the day they were installed. The "fin" heating sections are made of high test cast iron to cooperate with the war effort. Engineered and tested to operate with either hot water or steam up to 250 lbs. pressure.

### ONE PIECE CONSTRUCTION

No Soldered, Brazed, Welded or Expanded Connections

Made of similar metals, there is no electrolysis to cause corrosion, breakdowns or heating failures . . . nothing to become loose.

### BLAST SECTIONS

Made of high test cast iron, compact, the same one piece construction of the GRID Unit Heater . . . no tortuous air passages . . . no electrolysis . . . easy to clean . . . guaranteed for steam pressures up to 250 lbs. Catalog and capacity tables upon request.

**GRID**

**D. J. MURRAY MFG. CO.**  
WAUSAU, WIS.

When inquiring specify CP8609 — see information request blank, pgs. 2-3



**ROBINSON EQUIPMENT**

for the **PROCESSING** of

**CHEMICAL • FOOD • PLASTIC**

# MATERIALS

**Crushers, Pulverizers, Grinders, Reducers, Cutters, Blenders, Mixers, Sifters, Attr. & Hammer Mills.**

LITERATURE ON REQUEST

**MERCER-ROBINSON COMPANY**

30 CHURCH ST. NEW YORK 7, N. Y.

When inquiring specify CP8610 — see information request blank, pgs. 2-3



# OLIVITE



## ACID HANDLING PUMP

... each of several companies thought well enough of this pump after testing it to order over 100 units.

... many others are operating a score or more Olivites.

The whole design of the Olivite is pointed toward durability, efficiency and low-maintenance. Everything possible has been done to protect the strong pumping parts and shaft against corrosion. Special attention has been given to the stuffing box. In writing for Bulletin 308, send us details of liquids to be handled.

Olivites come in 1 1/4", 2 and 4 inch sizes: direct or V-belt drive.

## OLIVER UNITED FILTERS INC.

33 West 42nd St. New York 18, N. Y.  
Dept. OP

When inquiring specify CP8011—see information request blank, pgs. 2-3

# Uniform Separation

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of cement and other extremely fine materials within a range of 80 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh
- 25% to 30% greater recovery of fines
- Not affected by variation in speed or rate of feed.



Manufacturers also of "Reliance" Crushers, Screen, Elevators, Conveyors, Bin Gates, Grizzlies. Complete crushing, screening and washing plants for crushed stone, sand and gravel.

## Universal Road Machinery Co.

HUBERT M. GAY DIVISION 117 Liberty St. New York, N. Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP8012—see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

than one quarter that of steel. It can be sawed, drilled, turned on a lathe and in general can be machined like metals. Average physical properties: tensile strength, 36,000 lbs. sq. in., flexural strength, 29,000 lbs. sq. in. Impact strength 16 ft. lbs. in. width. Strength in compression 30,000 lbs. sq. in., specific gravity 1.6. Literature on request.

S. BLICKMAN, INC., Dept. CP; 709 Gregory Ave., Weehawken, N. J.

When inquiring specify CP8013—see information request blank, pgs. 2-3

## Rutile and Anatase Titanium Pigments and Their Relative Economy in Resin Emulsion Paints

Sixteen page booklet presents results of laboratory investigations on the relationships in hiding power and brightness which exists between rutile and anatase titanium pigments and their relative economy in resin emulsion paints. Ten full page charts show rutile Vs. anatase titanium oxide with respect to brightness; dry and wet hiding, both with and without lithopone; saving through replacement of anatase by rutile; and the merits of water dispersive rutile and anatase in comparison with normal grades of these pigments. Six pages of discussion and interpretation precede the charts in this booklet, which is timely in view of the present limited availability of vehicles for oil paints and the considerable attention being gained by the resin emulsion finishes. Booklet A-3860 on request.

E. J. DU PONT DE NEMOURS & CO., Dept. CP, Wilmington, Del.

When inquiring specify CP8014—see information request blank, pgs. 2-3

# NEW TRAINING FILM FOR MAINTENANCE WORKERS



"PIPING POINTERS"

16 mm. Sound Movie

NOW READY  
FOR FREE SHOWING  
IN ANY PLANT

Approx. Length, 30 Min.

## TEACHES PROPER HANDLING OF VALVES, FITTINGS AND PIPE

THIS film makes an easier task of training new piping workers. It explains the various types of valves and fittings—tells when and where to use them for best results. It shows how to repair valves—how to handle many other maintenance problems—how to conserve time and materials on the job.

## Free Use in Any Plant—Act Now to See It Soon

Assure a convenient early showing of "Piping Pointers" in your plant. Get in touch with your local Crane Branch that will arrange for use of the film and provide new "Piping Pointers" Manuals that make seeing the film doubly effective. If you prefer, use the coupon below and we'll have the Crane Branch contact you promptly.

Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Ill.

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# CRANE VALVES

When inquiring specify CP8016—see information request blank, pgs. 2-3

## SKIN INFECTION?

## USE NEO-FILM...New Liquid Coating

Prevent skin infections with NEO-FILM. This new protective coating shows amazing results under the most difficult conditions. New—a liquid—NEO-FILM dries to a "Visible Glove". Resists the penetration of oils, greases, many chemicals, coolants, solvents, fumes, etc. Priced low to reach many hands. Use the coupon below. Send for your trial bottle today.

NEO-FILM  
"The Visible Glove"  
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JONES MEDICAL LABORATORIES, INC.  
800 HURON ROAD • CLEVELAND, OHIO  
Please send us a trial bottle of NEO-FILM

Name.....  
Company.....  
Address.....

When inquiring specify CP8015—see information request blank, pgs. 2-3



- ★ NO THREADS ★ NO SOLDER ★ NO FLARE ★ NO WELD
- ★ HOLD BEYOND THE BURST STRENGTH OF THE TUBE ★ EASILY CONNECTED ★ EASILY DISCONNECTED AND RECONNECTED
- ★ NO LOSS OF TIGHTNESS OF JOINT THROUGH VIBRATION
- ★ FOR HYDRAULIC, OIL, WATER, GAS, FUEL, AND AIR LINES

No other fitting is designed to do the job that Enmeto will accomplish effectively, swiftly, and at low installation cost, because there is no other fitting exactly like the Enmeto. It's a fitting on which you should have complete details fully described in the Enmeto catalog. We'll be happy to send a copy on request.

THE WEATHERHEAD COMPANY • CLEVELAND 8, OHIO  
Branch Offices: Detroit, Los Angeles, New York and St. Louis

Look Ahead with Weatherhead

**Weatherhead**

When inquiring specify CP8617 — see information request blank, pgs. 2-3

## PREVENTS ACCIDENTS and SPLASHING!



**Wahlert  
SAFETY  
CARBOY  
DRAINER**

*This CARBOY TILTER controls the flow!*

**SAFEGUARDS  
EMPLOYEES!**

MADE IN 3 SIZES

5 Gallon Size (11 1/4" to 2 1/4")  
Standard Size (2 1/4" to 3 1/4") 10 to 15 Gallon  
Large Size (3 1/4" to 3 3/4") Special Heat.  
These dimensions are outside diameters.

Send for literature "CP"

- Prevents accidents caused by splashing and carelessness.
- Uninterrupted flow.
- Air vent eliminates pumping or syphoning.
- Made of hard, acid-proof rubber.
- Soft rubber cuff permits drainer to be attached to carboys.
- All parts are replaceable.

**WAHLERT PRODUCTS CORP**

INDUSTRIAL SAFETY AND FIRE EQUIPMENT  
27 LAFAYETTE ST., BROOKLYN, N. Y.

When inquiring specify CP8618 — see information request blank, pgs. 2-3

## PRODUCTION

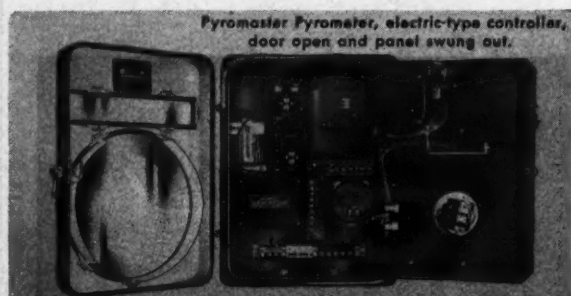
### Dust Collector Units Cleaned During Continuous Operation

*One section automatically shut-down for cleaning while other remains in operation*

**Uses** — Adaptable to a wide variety of dust collecting applications: carbon, cement, chalk, clays, coal, emery, flour, glass, granite, graphite, gypsum, hard rubber, pigments, porcelain, plastics, silica, soap, talc, wood, zinc oxides and various others.

**Features** — The compartments incorporated in the "continuous type" units included in this line of dust collecting equipment provides for arrangement that permits one section to be shut off by a damper valve controlled by an automatic timer while the shaker for that section is operating. After the shaking cycle this section is again put into operation by the automatic opening of the damper valve. This process is applied to all sections in turn. (See drawing) In most cases it is not necessary to operate the shaker more than about two minutes. Dust tubes, easily installed, inspected, cleaned and replaced.

**Description** — These "dust tube" collectors are available in three types: "the knocked down type which is shipped disassembled because of its size and built in capacities from 2820 cfm to 35,250 cfm at 3:1 ratio and in 3760 cfm to 47,000 cfm at 4:1 ratio. Also in assembled types in several sizes. The heart of the "dust tube" dust collector consists of tubes, made of fabric, seams of which are carefully sewn and double stitched with No. 24 hard finish thread. Materials to meet special requirements can be furnished. The tubes are hung on hooks suspended from a shaker channel



Pyromaster Pyrometer, electric-type controller, door open and panel swung out.

### BRISTOL'S PYROMASTER SELF-BALANCING POTENTIOMETER WITH MANY NEW FEATURES

All parts accessible even when operating. Standard cell. High torque motor. Totally enclosed relays and galvanometer. Enclosed tarnish-resistant slide-wire. Easily-read straight-line scale.

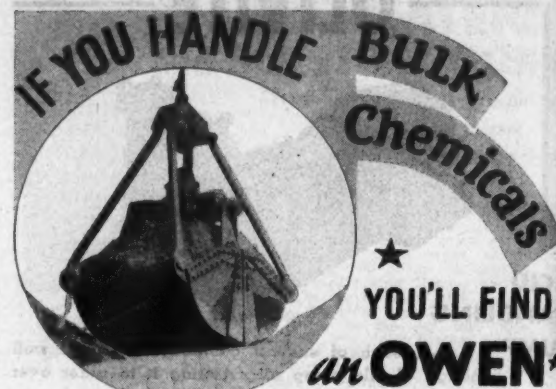
Bulletin P1200 describes PYROMASTER Pyrometers for temperatures up to 3600°F. — controllers, recorders, indicators.

Write The Bristol Company, 141 Bristol Road, Waterbury 91, Conn.



**AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS**

When inquiring specify CP8619 — see information request blank, pgs. 2-3



### \*to MEET YOUR REQUIREMENTS

Available in a variety of types and sizes, Owen rehandling buckets are particularly adapted for work with bulk chemicals.

Proper weight distribution and special shell curvatures assure capacity loads and rapid dumping action. Write for catalog.

The OWEN BUCKET Company  
7050 Breakwater Avenue • Cleveland, Ohio  
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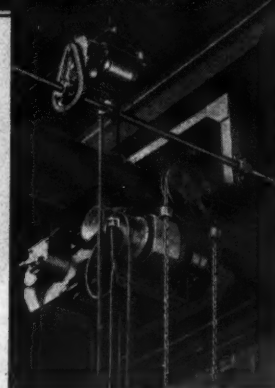
When inquiring specify CP8620 — see information request blank, pgs. 2-3

## MOTOR TRAVEL for Hand Traveled Crane Bridges THE Northern "TRAVELATOR"

Less than half a day required for application — no dismantling of crane — any good mechanic can apply the Northern "Travelator."

It provides pendant push button controlled electric power travel for hand traveled bridges within the range of 10 tons capacity.

The "Travelator" is an inexpensive, thoroughly effective durable device



**Northern**

WRITE FOR BULLETIN 3

**ENGINEERING WORKS**

2605 Alwater Street, Detroit, Michigan  
Offices in Principal Cities

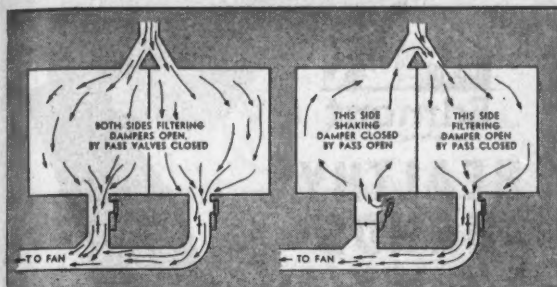
Northern Crane & Hoist Works Limited, Windsor, Canada

When inquiring specify CP8621 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION



VIEW SHOWS CLEANING SEQUENCE of dust collector compartments in maintaining continuous operation

overhead. Tube is securely mounted and sealed in cell at other end. No tool is required for installing or removing tubes. The entire shaking device is easily accessible from a walkway between the bank of tubes. In the continuous units each section is provided with the motor operated shaking device and damper valve both of which are located on the clean air side of the collector. The damper valve is connected to the fan inlet pipe. Its purpose is to stop the flow of air through a particular section or compartment so that the dust can readily be released from the cloth by action of the shaker device. A multiple circuit electric timer is used to open and close the circuits to the damper valves. Both the timer and the motor operate at the same time. Timer can be adjusted for any desired cycle and contact period.

**Application** — The great flexibility and adaptability of this equipment is illustrated in the manner it was quickly converted from the purpose of its original installation in an enameling plant for service in clay refinishing and cleaning department to egg drying operations. This change was imposed by war restrictions and the desire to find a vital activity in which the equipment could be put to work. The collector was insulated to prevent moisture condensation. Agitators were also required in the dust hoppers. Continuous operation and thorough cleaning features were valuable here in collecting all egg powder. Catalog giving complete information on this equipment on request.

AMERICAN FOUNDRY EQUIPMENT CO., Dept. CP, Mishawaka, Ind.

When inquiring specify CP8622 — see information request blank, pgs. 2-3

### Plasticizers, Softeners for Coatings, Plastics, Cellulose Esters, Synthetic Resins, and Rubbers

A series of new plasticizers and softeners for use in coatings, adhesives, plastics, cellulose esters and ethers, synthetic resins and synthetic rubbers are listed on a convenient chart. They consist of alkyl and alkyl ether esters of higher fatty acids and dicarboxylic acids. They are characterized by their low freezing points and very mild odors. Chart gives specific gravity, color, solidification point, acid value, solubility, boiling point, compatibility and odor. Copies on request.

GLYCO PRODUCTS CO., Dept. CP, 26 Court St., Brooklyn, N. Y.

When inquiring specify CP8623 — see information request blank, pgs. 2-3

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.

# ...and failure gets no second chance!

"Surface!" With that command life itself hangs in the balance... depends upon pumps... reliable and efficient pumps that dare not fail once! It's a critical moment at any time... on any submarine, that demands the highest standards of perfection in pumping equipment.

That's why Fairbanks-Morse Pumps are used in United States submarine service. You can rely on Fairbanks-Morse Pumps... can know in advance that their mechanical superiority assures you dependable, economical operation now and for years to come.

For consultation without obligation, write Fairbanks, Morse & Co., 205 Fairbanks-Morse Building, Chicago 5, Illinois.

### Fairbanks-Morse Centrifugal Pumps

A complete "family" of single-stage, split-case pumps for low, moderate, medium, and high heads, is described in Bulletin 5810D. Many other bulletins available on other types.

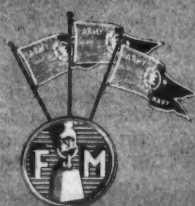


## FAIRBANKS-MORSE

DIESEL ENGINES  
PUMPS  
MOTORS  
GENERATORS  
RAILROAD EQUIPMENT



WATER SYSTEMS  
SCALES  
STOKERS  
FARM EQUIPMENT  
Pumps



When inquiring specify CP8624... see information request blank, pgs. 2-3

# "EASY DOES IT"



## LINCOLN CENTRO-MATIC

**LUBRICATING EQUIPMENT**  
lubricates all bearings  
from a single source



**EASILY INSTALLED**  
on NEW or OLD MACHINES

Act now, and avoid bearing failures... Maintain production for Victory.

A Centro-Matic System consists of a number of Centro-Matic Injectors—one for each bearing—and a power operated or a hand operated Centro-Matic Lubricant Pump. A power operated system can be either time clock control or push button control... The injectors can be grouped in manifold or located separately at each bearing. In either arrangement only a single lubricant supply line is required.

Please write for Bulletin 671 and send us blueprints of the machines you plan to lubricate. Our engineers will gladly make recommendations.



**THE ARMY-NAVY PRODUCTION AWARD**  
for high achievement in the production of war equipment, conferred upon the Lincoln Engineering Company has had a star added. This star symbolizes 6 more months of exacting service to our Armed Forces, delivering vital materials so necessary for ultimate Victory.

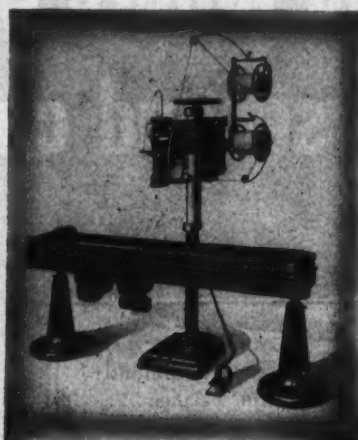
FOR VICTORY—BUY U.S. WAR BONDS and STAMPS 44-32

**LINCOLN ENGINEERING COMPANY**  
PIONEER BUILDERS OF LUBRICATING EQUIPMENT  
5701 NATURAL BRIDGE AVENUE, ST. LOUIS 20, MO., U.S.A.

When inquiring specify CP825 — see information request blank, pgs. 2-3

## PRODUCTION

**Bag Closer Uses Various Heads,**  
Offered in 1 or 2 Stitch Types  
*Handles multi-wall paper bags and cloth bags*



COLUMN TYPE BAG CLOSER

and a sewing head (no. 60000). Depending on the sewing head used the bag closer produces (1) bound over tape closure for all sizes of multi-wall paper bags, (2) straight sewed closure for all sizes of cloth or paper bags or (3) the "dubl-tape" sewed closures for paper bags up to 10 lb. size. Further information available upon request.

UNION SPECIAL MACHINE CO., Dept. CP, 400 N. Franklin St., Chicago, Ill.

When inquiring specify CP826 — see information request blank, pgs. 2-3

**Compressor For Special Service**  
Or Small Plants

*Single stage; double acting, water cooled unit;  
capacity ranges to 822 cfm.*



VERTICAL COMPRESSOR

unit. Large smooth air passages throughout assures unre-

**Uses** — Accommodates all types of the maker's sewing heads and can be used with any conveyor.

**Features** — Either one or two stitch types can be provided; the single thread chain stitch for easy raveling double locked stitch for extra strong closure.

**Description** — This new unit (see illustration) includes the maker's new special style pedal controlled power conveyor



Most skin diseases and inflammatory conditions are caused by direct contact and exposure to harmful irritants. Edmont Industrial Gloves offer ideal protection against such infections. They provide high resistance to oils, solvents, acids, caustics, etc. The synthetic rubber coating is reinforced by an inner lining of sturdy fabric, napped for greater hand comfort. The gloves are virtually snag-proof and tear resistant. Flexible and efficient to work with. On and off the hands in a jiffy. Knit wrist and gauntlet styles. Both men's and women's sizes. Write for descriptive literature.

**EDMONT MANUFACTURING CO.**  
501 ORANGE STREET COSHOCTON, OHIO  
**Specialists in Rubberized Industrial Gloves**

When inquiring specify CP827 — see information request blank, pgs. 2-3

**Something NEW IN**  
**Dust Control**



Here's the new Pangborn "CK" Industrial Type Unit Dust Collector. Developed through extensive research, it is our answer to the need for complete dust control on a specific job by means of a single unit possessing unusual capacity.

Fully described in Bulletin #910. Write for your copy today!

**PANGBORN**

WORLD'S LARGEST MANUFACTURERS OF DUST CLEANING AND DUST COLLECTING EQUIPMENT  
**PANGBORN CORPORATION • HAGERSTOWN, MD.**

When inquiring specify CP828 — see information request blank, pgs. 2-3





THIS DATA  
IS  
VALUABLE

TECHNICAL DATA AND PRICE INFORMATION ON

VERD-A-RAY

SHOULD BE IN YOUR FILES—ASK FOR IT—TODAY



A list of users in industry would look like "who's who" in war materiel production. Where glare exists, this new lamp is now accepted as a necessity. Try it. Technical data and sample will be sent without obligation to you.

SAVE ELECTRIC CORP., TOLEDO 5, OHIO

When inquiring specify CP8629 — see information request blank, pgs. 2-3

QUICKER  
HEATING

- Small Size
- Light Weight
- One Moving Part
- Low Price

OVER  
250,000  
SOLD

Sold by more than 100 Mill Supply Distributors throughout the U. S. A. See your supply house or write for Catalog T-1738

YARNALL-WARING CO., 125 Marmora Ave., Phila. 18, Pa.

YARWAY

IMPULSE STEAM TRAP

When inquiring specify CP8630 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

stricted air flow from intake to discharge. Truncated piston design gives large valve and head radiation area and valve assemblies are easily accessible for inspection. Only simple block type foundation needed. Automatic stop and start control can be furnished. This series (WG-9) is available in capacity ranges to 822 cfm piston displacements, for operating pressures to 150 lbs. Standard drive is multiple vee-belt. Machines can be furnished for flat belt or vee flat drive. Bulletin A-43 gives complete information on this compressor and also on after coolers, receivers and filters.

SULLIVAN MACHINERY CO., Dept. CP, Michigan City, Ind.

When inquiring specify CP8631 — see information request blank, pgs. 2-3

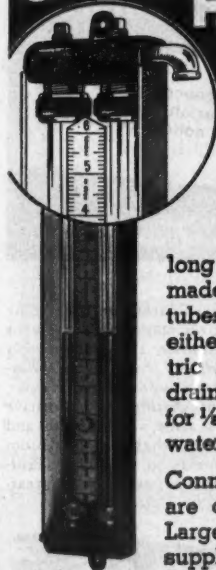
### Bulletin Discusses Dermatitis of Workers Hands due to Irritating Materials and Allergy

Four page technical bulletin presents practical discussion of industrial dermatitis of workers' hands, emphasizes the importance of rubber gloves as a protective measure and analyzes the various causes of this widespread hazard. Ten most frequent causes are listed and the percentage of total cases of dermatitis that each accounts for is given. Allergy-caused dermatitis is also discussed as is also possible reasons for natural rubber gloves contributing to skin irritation in this manner. Properties and features of neoprene rubber gloves are given detailed treatment. Bulletin on request.

THE PIONEER RUBBER CO., Dept. CP, Willard, Ohio.

When inquiring specify CP8632 — see information request blank, pgs. 2-3

## Connelly EXTRA HEAVY DUTY Manometers



FOR PERMANENT  
MOUNTING

The new Connelly Manometer, Model 3400 — built for extra heavy duty — can be depended upon for accuracy and long life under all conditions. It is made with large bore, clear glass tubes for easier reading, graduated either in inches and tenths or in metric measure. Gland packed, with drain plugs at the bottom and fitted for 1/2" pipe connections. For use with water or special anti-freeze solution.

Connelly Model 3400 Manometers are carried in stock in five sizes. Larger or intermediate sizes can be supplied if desired.

Write today for bulletin and prices.

CONNELLY IRON SPONGE & GOVERNOR CO.  
CHICAGO 11, ILL. ELIZABETH H. J.

When inquiring specify CP8633 — see information request blank, pgs. 2-3

Have You a

Tough Pumping Problem?



### Then get this New MOYNO PUMP BOOK!

There's no excuse, these days, to use old-fashioned pumps that hinder output with frequent breakdowns and low efficiency! Not when those problems can be practically *eliminated* by the revolutionary R & M Moyno Pump!

Get this new book and find out how the Moyno can help you. In eight fact-packed pages, it tells the complete Moyno story—compares the Moyno with other types of pumps, feature for feature. The Moyno Pump is recognized as the greatest pumping improvement in a decade, and it's rolling up *astounding* performance records in chemical plants all over the country. Because of its simple, unique pumping action, wear and resulting maintenance delays and expense are reduced to all-time lows. And because the Moyno handles heavy viscous and abrasive liquids *easily*—without cavitation or turbulence—production is increased and product quality is improved.

The entire book was written by Moyno engineers for other engineers who want all the details in technical, usable form. Your copy will be sent immediately—mail the coupon today!

### ONLY ONE MOVING PART!

Here's the patented principle of the R & M Moyno Pump's amazing performance. A single-threaded helical rotor revolves in a double-threaded helical stator, providing pumping action like that of a piston moving through a cylinder of infinite length.

Moyno pumps are manufactured under R. Moineau patents.

ROBBINS & MYERS, Inc., Moyno Pump Division, Springfield, Ohio  
(In Canada: Robbins & Myers Co. of Canada, Ltd., Bramford, Ontario)

Please send me the new 8-page book on the R & M Moyno Pump.

Name.....

Firm Name.....

Address.....

Pump will handle.....

When inquiring specify CP8634 — see information request blank, pgs. 2-3

# JESSOP

**SOLID STAINLESS  
STEELS**

Bars • Sheets • Plates

**STAINLESS-CLAD  
STEELS**

Sheets • Plates  
Flanged and Dished Heads

Jessop Steel Company mills are a complete producing unit for the melting and processing of solid stainless steels and stainless-clad steels in all standard analyses and sizes and for special analysis to meet special service requirements. The wide knowledge and experience of our organization assure the exacting user reliable and expert assistance in solving problems. Write for detailed information on these Jessop Steels for your particular application.

\*U. S. Patent Nos. 1,987,538 and 2,044,742

**JESSOP STEEL CO.**

HEAD OFFICE AND WORKS  
WASHINGTON, PENNA.



When inquiring specify CP8635 — see information request blank, pgs. 2-3

Page 70

## PRODUCTION

### Pneumatic Conveying Systems for Handling Bulk Materials

*In low, medium or high vacuum or pressure types*

**Uses** — Handling and transporting bulk materials such as clay, coal, charcoal, borax, lime, litharge, salt, sand, soda, ash, starch, sugar, talc, white lead etc.

**Features** — Conveying line can be installed to conform to various layouts and construction designs. It can be carried overhead, underground and directed as required. Controls dust when transporting powdered materials, low maintenance and labor costs and contributes to improved working conditions, permits receipt of materials in bulk, lowering handling cost. It does not interfere with existing machinery.

**Description** — Suction and pressure type conveyors available. Suction system is applied to great number of material handling requirements. For unloading powdered materials from railroad cars, the high vacuum system has advantages. This involves a slight increase in cost per ton of material conveyed but it offers advantages of greater compactness and flexibility due to smaller diameter pipe lines. Smaller size hose pipeline and receiving station make the system simpler to install. The 3-3½ inch hose and intake nozzle make it possible for the operator to maneuver it easily while a larger hose and nozzle that would be required in employing a low or medium vacuum system would be less convenient. The principle of the system is to induce through a pipeline and air flow of sufficient velocity to support the particles of material

## Corrosion Proofing Concrete

\*"About two years ago, we painted concrete piers and beams that were subjected to muriatic acid fumes with Prufcoat and to date we have noticed no further deterioration of the concrete."

\*Report from one of America's largest chemical manufacturers. Name upon request.



The Prufcoat film formed after polymerization has virtually a zero acid number, saponification number and water absorption rate.

Prufcoat Protective Coatings are applied by brush by your own maintenance crew to any surface — concrete, steel and masonry structures, tank cars and trucks, chemical handling equipment, tanks and ventilating systems, etc. The resultant coating gives Positive Protection against acids, alkalis, water and weather. No matter what your corrosion-proofing problem may be, chances are Prufcoat can show you a performance-proved treatment. Write today for folder.



Prufcoat Laboratories Incorporated • 53 Main St., Cambridge 42, Mass.

When inquiring specify CP8636 — see information request blank, pgs. 2-3

## SHRIVER FILTER PRESSES

**FOR NEW PROCESSES  
BETTER TECHNIQUES**

- 1 FILTRATION** at any temperature or pressure to recover solids or liquids or both in any quantity at low labor and maintenance cost.
- 2 CLARIFICATION** of liquids of any viscosity—using any filter media, filter aids, decolorizing or deodorizing agents.
- 3 WASHING** filter cake thoroughly, entirely free of solubles.
- 4 DRYING** filter cake partially or completely in the press by air or steam, saving on subsequent drying time and cost.
- 5 THICKENING** slurries continuously, saving on decantation, extraction or washing time over settling methods.
- 6 HEATING** filter cake in the press to distill, evaporate and recover all traces of solubles.
- 7 REDISSOLVING** of filter cake in the press after filtering, to save on equipment and handling.
- 8 BACKWASHING** to remove cake without opening filter press, saving on cleaning and preparation for the next batch.

The use of a Shriver Filter Press for any one or combination of these functions cuts down on equipment, space, time and quantity of material in process.

All this and plenty more in the Shriver Filtration Book. Write for a copy.

**T. SHRIVER & CO., Inc.**

846 Hamilton St.

HARTISBURG, N. J.

When inquiring specify CP8637 — see information request blank, pgs. 2-3

**MODERN, COMPACT  
ELEVATING UNIT**  
*offers Big Savings  
in Space!*

You can now obtain faster, smoother, more positive elevating of free-flowing bulk materials — with a big saving in floor space. The "Hammond" Screw-Lift is a simple, self-contained, compact, smooth-running unit, easily installed under the most crowded conditions and highly efficient.

Give You All The "HAMMOND" This and More! **Screw-Lift**

Elevates to any height. Eliminates fire hazards. Dust-tight — weather-proof. Self-cleaning. Quiet operation. Handles any free-flowing material. Easy to install. Low maintenance.

Type "A" Unit with controlled gravity feed. Patented.

Effectively handles such materials as starch, flour, sugar, cereals and coal for such operations as receiving, unloading, storing, reclaiming, etc. It embodies exclusive patented features. Combined with Screw-Veyer, it forms an integrated condensed material handling system. Comes in capacities of 75, 300, 1000, 2500 cu. ft. per hour — controlled gravity or power feed. Our Form M-500-2 will help you to greater efficiency in the handling of your own materials. Send for it — no obligation.



**Screw Conveyor Corporation**  
699 HOFFMAN ST. HAMMOND, IND.  
ENGINEERS MANUFACTURERS PRODUCTS

When inquiring specify CP8638 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

which are carried to the end of the line by the inrush of atmospheric air. At the receiving station, the great reduction in velocity precipitates most of the particles, the remaining fines are recovered in the filter equipment, while the conveying air is exhausted to the atmosphere through the vacuum pump. Receiving stations are equipped with or without filters as required. In the pressure system the material is blown directly into bins or into receivers and the dust which is created is controlled by a filter mounted directly over the receiver or by a separate dust collector. The intake nozzle is easily manipulated by the operator and provides for remote control of atmospheric air. Design assures proper mixture of air and material at nozzle. A swivel coupling increases the flexibility. For permanent connection under receptacle an intake hopper is used. The air inlet is similar in construction to the nozzle. Literature describing all these units and related parts is available upon request.

DRACCO CORP., Dept. CP, Harvard Ave. & East 116th St., Cleveland, Ohio.

When inquiring specify CP8639 — see information request blank, pgs. 2-3

## Monel Metal Floats for High Pressure & Temperature Use

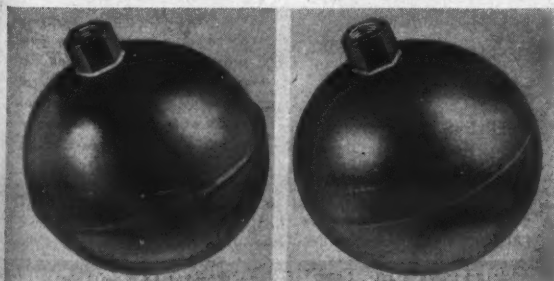
*For steam traps, controllers and use in chemical, petroleum, food industries*

**Uses** — These hollow metal floats are for use in steam traps, liquid level controllers and similar float actuated mechanisms. Designed for corrosion resistant service at temperatures up to 757 degrees F. Suited to many uses in chemical, petroleum and food industries.

**Description** — Two types of float construction are available, both employing monel metal shells. In one the joint is brazed with high temperature silver solder, and connection fittings are silver brazed; in the other the shells are welded with monel metal, and connection fittings are either silver brazed or welded. The silver brazed construction provides a smooth exterior surface. Floats of either type are available in a range of sizes from two to eight inches in diameter, spherical (ball) shape only. A variety of standard brass or monel metal connections is available, or floats can be made without connection. Illustration shows standard brass hexagonal spud connection with  $\frac{1}{8}$  in. internal thread. These floats are designed to provide great strength, ability to withstand high operating temperatures and the corrosion resistant properties required. Either brazed or welded construction allows conservative rating of these floats for service at working pressures up to 300 lbs. sq. in. and temperatures up to 700 degrees F.

CHICAGO FLOAT WORKS, INC., Dept. CP, 2330 So. Western Ave., Chicago 8, Ill.

When inquiring specify CP8640 — see information request blank, pgs. 2-3



MONEL FLOATS . . welded type (left), brazed (right)

JANUARY - FEBRUARY, 1944

**New RIGID Long-Taper Reams Easily**



● This new long-taper reamer removes the burr only, reams easily, will not thin or split wall of pipe or conduit. The long-taper does it — and does it easily, with feather-light ratcheted strokes, saving you time and effort. **RIGID** long-taper LongGrip Reamer comes complete with ratchet handle or you can buy reamer unit alone for use in **RIGID** No. 00R threader handle, as shown at left. Capacity  $\frac{1}{8}$ " to 2". For easy safer reaming — ask your Supply House for this new long-taper **RIGID** Reamer. Immediate delivery.

Sold by Supply Houses Everywhere

**RIGID**  
★ PIPE TOOLS ★



THE RIDGE TOOL COMPANY  
Elyria, Ohio, U. S. A.



**RIGID**  
the pipe wrench that stays  
*On the job*

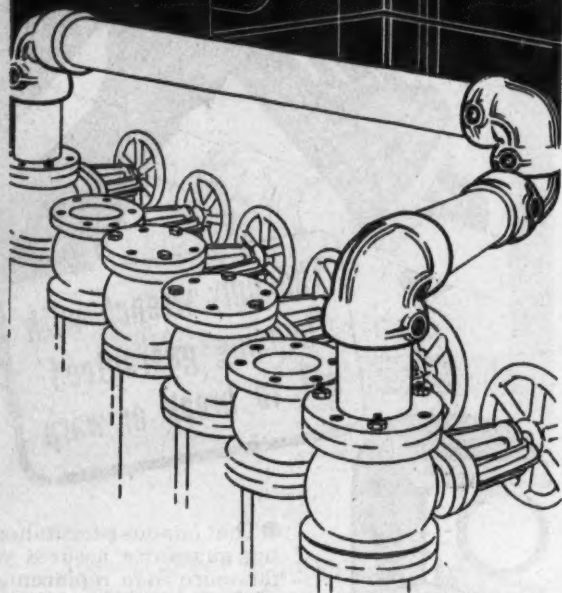


● That famous **RIGID** housing guarantee assures you far more than replacement of the housing free if it ever breaks or warps. It means that millions of these wrenches in service have proved that nothing goes wrong with the housing — and the wrench stays on the job. No housing repair expense, no tools out of service, fewer spares needed. You'll like also the adjusting nut in open housing that always spins easily to pipe size — and the handy pipe scale on hookjaw — and the comfort-grip I-beam handle. Keep work up, costs down — ask your Supply House.

Millions of **RIGID** Tools in use

When inquiring specify CP8641 . . . see information request blank, pgs. 2-3

# DESIGNED FOR FLEXIBILITY with LOW TORQUE



CHIKSAN Ball-Bearing Swivel Joints turn with minimum torque because easy rotation is assured by double rows of ball bearings. There are no stuffing boxes or packing glands to keep tight . . . nothing to adjust. The pack-off is self-adjusting and is so effective that the same joints may be used both for pressure and vacuum service. Positive lubrication is also provided for.

There are over 500 different Types, Styles and Sizes for every purpose, providing full 360° rotation in 1, 2 and 3 planes. Made in standard sizes from 3/8" to 12"; larger sizes to order. Write for latest Chiksan Catalog.

Chiksan Representatives in Principal Cities  
Distributed Nationally by Crane Co.

**CHIKSAN TOOL COMPANY**

BALL BEARING SWIVEL JOINTS IN ALL PURPOSES  
BREA, CALIFORNIA

When inquiring specify CP8642 — see information request blank, pgs. 2-3

## PRODUCTION

### Goggle & Hairguard Combination

Plastic eyemask, light weight cap for cool, comfortable protective service



**Uses** — To provide a greater degree of comfort by light weight and resultable coolness. Suited for wide range of protective service.

**Features** — Either eye-mask or shield may be worn separately but their custom design makes them especially suitable for combination use for utmost safety. Mask has extra ventilation by perforations above and below vision area and weighs only two ounces. Hair guard is light weight, durable. Can be imprinted to

**EYE MASK & HAIRGUARD** specification. Cleanable and adjustable. Visor serves as a bumper for extra safety.

**Description** — Eye mask is non-flammable. In clear or green style. Unperforated if desired. Large and small sizes. Designed for great impact resistance. Hairguard made in ivory or blue. Further information on request.

STANDARD SAFETY EQUIPMENT CO., Dept. CP,  
232 W. Ontario St., Chicago, Ill.

When inquiring specify CP8643 — see information request blank, pgs. 2-3

### For Safety, Sanitation, Comfort

## AMERIFLEX

### THE FLEXIBLE WOOD LINK MATTING

Delays fatigue. Increases production. Substantially constructed. Lies flat. Follows contour of the floor. Beveled edges reduce danger of tripping. Can be rolled or folded for easy handling and cleaning. Comes in stock sizes. Also available in any special size or shape. One inch thick. Quick delivery. Write for prices and new catalog sheets describing various types of matting. Give us details concerning your problems, such as location, prevailing conditions, and size of the area to be covered.

### FLASH!

#### RUBBER MATTING

for Switchboards  
that have  
Exposed Switches

#### NOW AVAILABLE

without  
War Contract  
Number

Jobbers, Write  
for Details

**AMERICAN  
MAT CORP.**

1798 ADAMS STREET  
TOLEDO, OHIO

"America's  
Largest Matting  
Specialists"



When inquiring specify CP8644 — see information request blank, pgs. 2-3

## CLEANLINESS ★ is smart business ELIMINATE DUST AND DIRT!

### Parsons Oval BAG DUST ARRESTORS

In hundreds of cases factory dust and dirt is the primary cause of absenteeism, slowing up of production plus premature deterioration of equipment and plant.

Parsons Oval Bag Dust Arrestors have been doing an outstanding job in all types of industries, for over a quarter of a century and today are recognized as one of the most modern and efficient pieces of dust control equipment on the market. Equipped with many exclusive features such as patented Oval Filtering Bags, Non-rusting Arrestor Case, simple Taxrope Drive, Heavy Duty Welded Hoppers and others.

Regardless of what your problem is, call in our engineers, no obligation, or write for our free dust control bulletin, "Mastery of The Air."

**PARSONS  
ENGINEERING CORP.**  
2545 E. 79th ST., CLEVELAND, OHIO

When inquiring specify CP8645 — see information request blank, pgs. 2-3

## PEERLESS PUMPS

--The Water Way  
to Victory



10 TO 200,000  
GALLONS PER MINUTE

PEERLESS in name  
PEERLESS in design  
PEERLESS in manufacture  
PEERLESS in performance  
PEERLESS in economy

Peerless builds pumps for every conceivable water lifting purpose. Whether you want ten gallons per minute, or several thousand, whether you want to lift water one foot or several hundred, Peerless has a pump that will just fit the condition.

PEERLESS PUMP DIVISION • FOOD MACHINERY CORP.  
301 West Avenue 26 • Los Angeles 31, California  
FACTORIES: Los Angeles, San Jose, Fresno, Calif.; Canton, Ohio

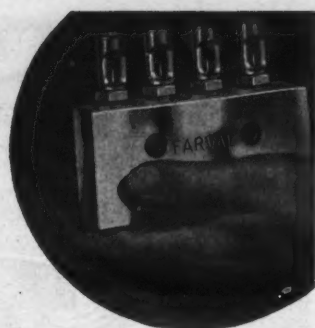
PEERLESS TURBINE • HI-LIFT • HYDRO-FOIL TYPES

When inquiring specify CP8646 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



# FIRST- to make bearings last!



**FARVAL** was first to build the modern Centralized Lubrication System—first to make bearings last longer.

Scarcely bigger than your fist, the Farval Measuring Valve gives you *two-fisted* protection. It keeps bearings of every type in fighting trim by delivering lubricant in the right amounts, at the right intervals, to all your bearings.

Farval will help you to increase the output from your present facilities. It will reduce the labor of oiling—eliminate repairs—prolong the life of your bearings and protect your production schedules.

Put protection *first*—make your bearings *last*. Install Farval!

THE FARVAL CORPORATION, 3257 E. 80th St., Cleveland 4, Ohio

In Canada: PEACOCK BROTHERS LIMITED

**FARVAL** CENTRALIZED  
SYSTEMS OF  
LUBRICATION

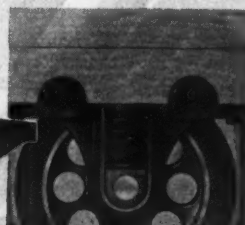
When Inquiring specify CP8047 — see information request blank, pgs. 2-3

## SPRING BEARING FEATURE ON "WELD-BILT" PLATFORM TRUCKS

SAVES TIME, LABOR, MEN,  
FLOORS, PRODUCT DAMAGE

Shocks from door sills, floor obstructions, rough floors, depressions, and wheel vibrations are **ABSORBED** in this "Weld-Bilt" SPRING BEARING axle construction. This means easier, faster trucking, and **LONGER TRUCK LIFE**, plus more profitable materials handling. Featured on "Weld-Bilt" Platform Trucks of all styles and designs. Write for **BULLETIN**.

"Weld-Bilt" Platform  
Truck, Model 8VBT.  
Capacity, 2500 lbs.



## WEST BEND EQUIPMENT CORP.

226 WATER STREET, WEST BEND, WISCONSIN  
MATERIALS HANDLING ENGINEERS

Hydraulic Lift Trucks, Two and Four Wheel Trucks, Tipping Machines,  
Silo Platforms, Barrel Trucks and Racks, Portable Elevators and  
Special Equipment

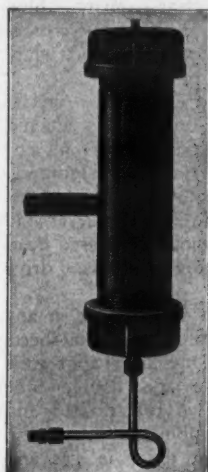
When Inquiring specify CP8048 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

### Small Humidifiers for Individual Unit or Multiple Installation

Each unit dispenses 42 lbs. of water per hour,  
only 10 inches long, 3 inches in diameter



HUMIDIFIER

of accumulation of condensate at all times.

TECHTMANN INDUSTRIES, INC., Dept. CP, 828 N.  
Broadway, Milwaukee, Wis.

When Inquiring specify CP8049 — see information request blank, pgs. 2-3

**Uses** — Installable in single units or in clusters of from 2 to 10 or more, thus allowing for humidification of space desired to meet requirements.

**Features** — Only 10 inches long and 3 inches in diameter can be quickly installed in less than an hour's time.

**Description** — Capable of dispensing 42 pounds of water per hour or 120 gallons in 24 hours. Surplus condensate accumulating in the humidifier can be drained back into the steam riser against pressure or can be drained into a vacuum trap. The adjustment screw at the top of the humidifier permits regulation to obtain the relative humidity desired. The drain pipe with water seal keeps the unit free

## NEW *Insoluble* HEAVY DUTY PIPE JOINT SEAL

## JOHN CRANE PLASTIC LEAD SEAL

SEALS, OIL,  
WATER, STEAM

Now, one seal for every service: pipe line, refinery, marine, power, chemical, general industrial uses. Temperatures to 600° F. Pressures to 4000 pounds per sq. in. Water, oil, steam, gases, petroleum distillates, propane, butane, hydrocarbons, etc. All equipment: threaded joints, flanges and gaskets, nuts, caps, valves, plugs, screwed fittings, pumps, cylinders, etc. AIRCRAFT: heater joints and fittings; hydraulic, gasoline and oil connections; shock absorbers; control elevators, etc. Send for prices, sample, literature.

CRANE PACKING COMPANY, 1800 CUYLER AVENUE, CHICAGO  
CRANE PACKING COMPANY, LTD. HAMILTON, ONTARIO, CANADA

When Inquiring specify CP8050 — see information request blank, pgs. 2-3



**YESTERDAY**  
The beam  
scale was  
popular... but  
slow, tedious,  
cumbersome!

## STEP INTO TOMORROW with your **WEIGHING**

**TODAY**  
Modern dial  
scales... accu-  
rate and rapid...  
but still do not  
eliminate costly  
human errors  
in reading and  
recording.



## TOMORROW

PRINTED Weight  
Records will be the  
accepted practice.  
The Toledo Print-  
weigh, now serving  
in hundreds of war  
plants, will give you  
new accuracy in your  
weight control.  
Toledo Scale Co.,  
Toledo, Ohio

TOLEDO  
NO SPRINGS  
HONEST  
WEIGHT  
PRINTWEIGH

**TOLEDO  
PRINTWEIGH  
SCALES**

When Inquiring specify CP8051 — see information request blank, pgs. 2-3

What vacuum  
do you want?

Get it with  
**ELLIOTT  
SteamJet  
EJECTORS**

Single-stage ejectors as illustrated, can pull low to medium vacuum. Two, three, or four-stage ejectors get high vacuum. Elliott ejectors are connected up almost as easily as a pipe fitting. No moving parts, no maintenance troubles. Tell us the vacuum you want, steam and cooling water conditions, process requirements.

**ELLIOTT  
COMPANY**

Heat Transfer Dept.  
JEANNETTE, PA.

District Offices in  
Principal Cities G-378

When inquiring specify CP8652 — see information request blank, pgs. 2-3

**55 Years of KNOW HOW**  
are **LOOKING**  
toward the **FUTURE**

**AN  
OPEN  
LETTER  
TO  
ALL  
USERS  
OF  
WHEELS  
for  
EVERY  
NEED  
IN  
INDUSTRY**

The expanding economy of the future will call for High Productivity with a Minimum of Waste. As builders of wheels, we believe we can best serve our customers by finding Common Denominators among the wheels they will require. If we can serve a dozen customers with ONE wheel type, the production can be in thousands instead of scores or hundreds. This means lower costs for top quality wheels—a welcome result whether those wheels are for resale units or for plant equipment.

With this in mind, we are inviting the submission of wheel specifications to us for confidential study. The probable and hoped for result will be soundly engineered wheels, volume costs, and prompt service. A line from you will be appreciated.

Please Address **RESEARCH DEPT.**

**FRENCH & HECHT, INC.**  
DAVENPORT, IOWA  
Wheel Builders Since 1888

When inquiring specify CP8653 — see information request blank, pgs. 2-3

## PRODUCTION

### Table Type Continuous Printers

For blue prints, direct process black and white prints up to 44 in. wide, any length

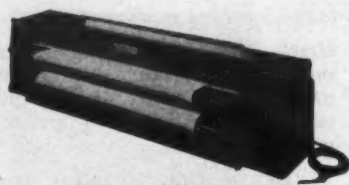


TABLE TYPE PRINTER

Uses — Produces clear, sharp blue prints or direct process black and white prints. Features — Special super-clear hand polished contact glass much more efficient in light transmission than ordinary plate glass. Controlled variable speed drive. Ball bearing mounted geared head drives directly through non-slipping positive drive sprockets and silent type chain.

Description — Produces prints up to 44 in. wide in any lengths at speed of up to 42 in. per min. Takes cut sheets or continuous rolls. Cooper-Hewitt mercury vapor tube lamps mounted horizontally. Single and double tube models compact, easily portable. Two roll printer and "directo" (Dietzgen) developer combination unit also available as well as continuous print dryer in gas and electric models. Literature on this equipment sent on request.

PECK & HARVEY, Dept. CP, 4327 Addison St., Chicago, Ill.

When inquiring specify CP8654 — see information request blank, pgs. 2-3

### Slide Rule Type Coil Winding And RF Resonance Calculator

All values found with single settings of slide



SLIDE RULE CALCULATOR

eter and coil length for single layer wound solenoid type RF coils.

Description — All values in either case, referred to above, are found with a single setting of the slide and are accurate to within approximately 1% for coils ranging from 1/2 inch to 5 1/2 inches in diameter and 1/4 inch to 10 inches in length. All possible combinations within these limits are shown. Wire type and size include 11 to 35 gauge plain enamel, 11-36 gauge S.S. C., D. S. C., and S. C. C. and 12-36 gauge D.C.C. The rule is also engineered to indicate; turns per inch from 10 to 60; inductance from 0.1 to 15 microhenrys; capacitance from 3 to 1,000 microfarads; frequencies from 400 kilocycles to 150 megacycles with equivalent wave lengths in meters. Overall minimum dimensions of rule (when not in use) nine and one half inches by four and one half inches. Available at extremely low nominal cost.

ALLIED RADIO CORP., Dept. CP, 833 W. Jackson Blvd., Chicago 7, Ill.

When inquiring specify CP8655 — see information request blank, pgs. 2-3



### SPRACO FLAT SPRAY NOZZLES

deliver a flat fan-shaped spray restricted to one plane. They are particularly suited to washing, quenching, cooling, and spraying processes where the distribution pattern of a conical spray would prove less efficient. The nozzles have no interior vanes, are non-clogging, and will pass any foreign matter smaller than the orifice.

Other types which we manufacture include nozzles to produce solid and hollow cone sprays, together with two fluid nozzles for mixing two fluids, or a fluid and a gas. For complete descriptions and performance data write for NOZZLE CATALOG.

#### OTHER SPRACO PRODUCTS

include Air Washers, Cooling Systems, Humidifying Systems, Automatic Spray Finishing Machines, Spray Painting Equipment, Battery Spray Moistening Equipment, Spraco Self-Cleaning Strainers and Spraco Condensing Type Oil and Water Extractors for air lines.

Write for Bulletin G-100



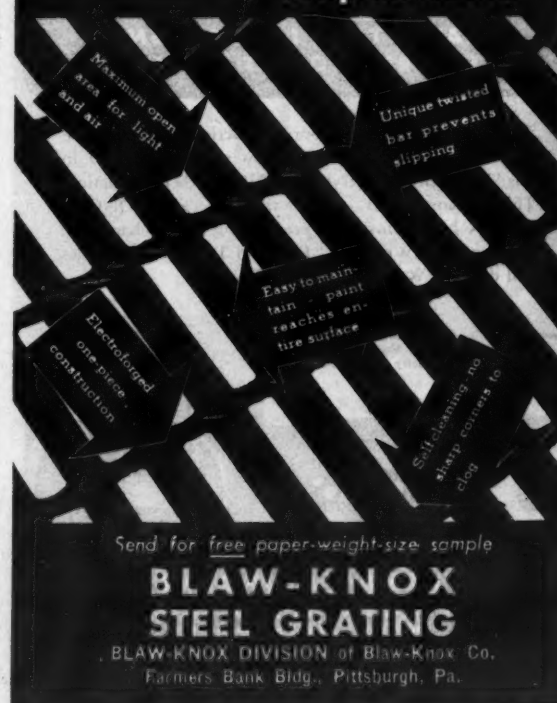
**SPRAY ENGINEERING CO.**

113 CENTRAL ST.

SOMERVILLE, MASS.

When inquiring specify CP8656 — see information request blank, pgs. 2-3

**OPEN** for  
inspection!



Send for free paper-weight-size sample

**BLAW-KNOX  
STEEL GRATING**

BLAW-KNOX DIVISION of Blaw-Knox Co.  
Farmers Bank Bldg., Pittsburgh, Pa.

When inquiring specify CP8657 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



**IF YOU ARE  
Packaging  
POWDERS  
TRIANGLE  
CAN HELP YOU!**

PRODUCERS of powdered chemicals or other finely divided substances or similar products requiring tight, accurate packing will find Triangle Auger Packers second to none for speed, flexibility and economy. A complete range of automatic and semi-automatic equipment is available to meet any production requirements. Triangle experience, based on hundreds of installations of equipment for even the hardest to handle powders, will help you get the best answer for your job in a hurry.

Also a complete line of Fillers, Weighers and Carton Sealers for all dry products. Write for facts and literature today.

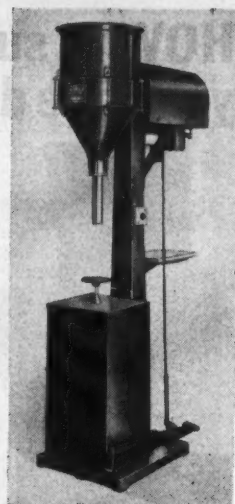
Other models for higher production.

**TRIANGLE PACKAGE MACHINERY CO.**

917 NO. SPAULDING AVENUE, CHICAGO

OFFICES IN PRINCIPAL CITIES, UNITED STATES AND CANADA

When inquiring specify CP8858—see information request blank, pgs. 2-3



**MODEL U  
AUGER PACKER**

Production 15 to 30 packages per minute. Range 1 oz. to 5 lbs. One operator required. Extreme accuracy.



**High  
Capacity  
Filtration  
Low-Cost  
Operation**

Maximum capacities can be consistently maintained with Swenson Rotary Drum Filters. Operation is entirely automatic... as many as eight or ten units can be controlled by a single attendant. These filters are also available in lead construction for acid filtration. Write for Bulletin F-100, Swenson Evaporator Company (Division of Whiting Corporation), 15667 Lathrop Avenue, Harvey, Illinois.

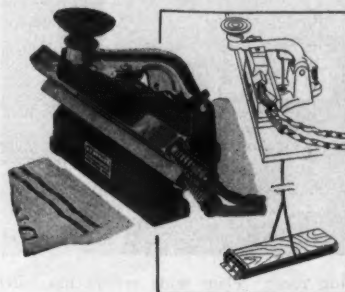
**SWENSON**

EVAPORATORS • FILTERS • CRYSTALLIZERS

**PRODUCTION**

**Pedal Attachment Adapts Sealer To Easy, Rapid Foot Operation**

*Device is suitable for variety of krimp seal operations on various heat sealing materials*



**FOOT OPERATED SEALER**

imum of effort, while heel rest helps eliminate fatigue. Wide hinge allows for simple installation and easy operation. Finely milled grimper bars are mounted on insulated blocks to confine heat to the bars. Special heating elements are used to accommodate practically all types of heat sealing materials. Operates on any 110 volt outlet AC or DC. Complete details on the E-Z Sealer on request.


PACK-RITE MACHINES, Dept. CP, 828 N. Broadway, Milwaukee, Wis.

When inquiring specify CP8859—see information request blank, pgs. 2-3

*Uses — To krimp-seal heat sealing bags for dehydrated and frozen food products and similar requirements.*

*Description — Foot pedal operation. Treadle type pedal 6x13 inches with heel rest and centrally balanced chain. Design provides great sealing leverage with minimum*

**Re-usable  
Permocharts  
Increase  
Efficiency  
of Recording  
Instruments**



★ Permocharts—flexible and waterproof instrument-recording charts made of washable plastic—make industrial control more accurate, more efficient, more simple, and less costly.

In the long run, Permocharts cost less than paper charts (about one-fifth as much). Centers are reinforced with plastic washers to prevent deterioration from re-use. There are sizes available for any recording instrument which uses circular charts.

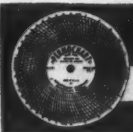
Re-usable Permocharts are available in white and three I-EZ colors—green, ivory, and blue; they are guaranteed for two years continuous service.

PRICE RANGES (F. O. B. Sewickley, Pennsylvania)

Up to 8"—\$1.50 each; up to 10"—\$2.00 each, up to 12"—\$2.50 each. Ink—2 oz. 70c; 8 oz. \$2.00

Minimum Order—3 Charts

Write for Literature and Quantity Discounts



**PERMOCHART Company**

545 CHESTNUT ROAD

When inquiring specify CP8860—see information request blank, pgs. 2-3



500 & 1000 Gallon Jacketed Processing Vessels—150 lbs. working pressure 9/16" plate. ASME Code—U-GH.

**National**

**PRESSURE VESSELS  
for PROCESSING EQUIPMENT**

**To Meet Your Standard  
or Special Requirements!**

"National" is an organization ideally fitted to do the "unusual" equipment jobs required by the chemical processing industry. Here is a combination of outstanding engineering skill, experience and craftsmanship — backed by one of the most modern and best equipped fabricating plants in the industry. If you have an "unusual" problem involving pressure vessels for processing equipment — consult "NATIONAL". We are familiar with every type of welded steel, alloy or stainless steel plate construction. Accepted high standards are carried throughout the entire manufacturing cycle — constant inspection with special X-ray machines and other exacting devices to check all processing and materials. Let us cooperate with you!

**National**

**ANNEALING BOX COMPANY**

API-ASME Codes • Stress Relieving • X-ray  
Pledged to Quality Since 1893

WASHINGTON, PENNA.

When inquiring specify CP8861—see information request blank, pgs. 2-3



## Dryers Rotary Retorts Coolers



These Dryers are ingeniously designed and engineered for the material to be dried, the time in which you wish to dry it, and the ultimate use to which the dried material is to be placed.

But all these facts are interestingly outlined and explained in our Booklet "Factors to Seek and Check in Buying a Rotary Dryer".

Send for your free copy.

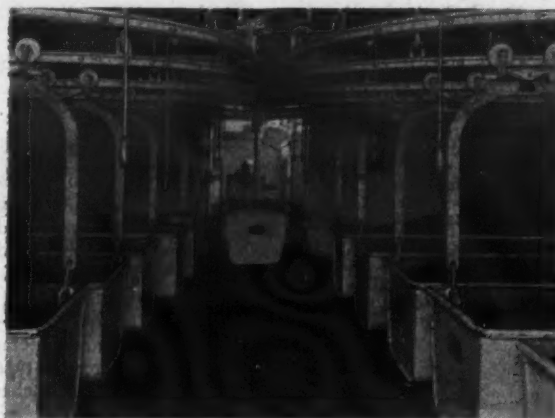
# L.R. CHRISTIE CO.

Headquarters for Drying Equipment

17 EAST 42nd STREET  
NEW YORK 17, N. Y.

When inquiring specify CP8662 — see information request blank, pgs. 2-3

## PRODUCTION



TROUGHS in conditioning room. Plant wide system has batch weighing scales and trough dump sections

## Overhead System Speeds Handling, Processing in Various Plants

*Wide application and flexibility in loading,  
unloading, transporting materials and  
in processing operations*

**Uses** — Provides flexible, speedy overhead system for a wide range of handling operations such as loading, unloading, transporting and spotting raw, bulk materials, bags, barrels, drums, crates and various containers as well as moving foods and materials through various stages of processing in such applications as shown here of trough installation, cannery, bakery, fruit packing, dairy applications typical of installations.

**Features** — Twin section track, one piece hanger, narrow flanges, overlapping splice, forged wheels, pressure lubrication. Systems are highly flexible and quickly adapted and modified to requirements. Loads moved with minimum of labor and effort and spotted easily and accurately.

**Description** — These overhead handling systems are installed to meet specific individual requirements as to weight and volume capacity, power, hoist and various auxiliary carrying equipment, head room available, switching etc. Profusely illustrated booklet featuring many actual installations in various food and raw material handling jobs on request.

AMERICAN MONORAIL CO., Dept. CP, 13107 Athens Ave., Cleveland, Ohio.

When inquiring specify CP8663 — see information request blank, pgs. 2-3

## Electric Tachometer Used As Both Hand And Separable Type

*Self-energized; in two models for 0-2500 rpm  
and 0-5000 rpm.*

**Uses** — Gives accurate check on production speeds. Testing, laboratory and production requirements.

**Features** — Alternating current is generated within the tachometer itself so no brushes, commutators or gears are required. Generator and meter are made as distinctly separate elements and coupled together by a precision bayonet lock. The units may be used together as a "hand" tachometer or for many applications including permanent mounting, the generator and meter may be separated —

## HOW to suppress your fine dust and fumes



The new Type "S" Whiting Hydro-Clone suppresses hazardous industrial dust and obnoxious fumes. An ingenious arrangement of the pre-cleaner and dis-

integrator sections completely knocks the dust out of the air stream and absorbs the fumes. All the dust is reduced to sludge, which drains into a dewatering tank from which the water is recirculated through the Hydro-Clone. The clean air is drawn out through the top by the exhaust fan. The unit is self-cleaning, and since there are no moving parts, screens, cloth bags, or spray nozzles, all maintenance is eliminated. Will handle air or gas at temperatures up to 1200° F.

Cut-away Available in capacities from view of 2000 to 30,000 C.F.M. Write for Type Bulletins FY-110 and FY-114. Hydro-Clone.

"Wetting is True  
Suppression"

**WHITING  
CORPORATION**  
15667 Lathrop Ave.  
Harvey, Illinois

When inquiring specify CP8664 — see information request blank, pgs. 2-3

## THOMAS TRUCK of Keokuk



THOMAS MAKES

4 WHEEL TRUCKS

2 WHEEL TRUCKS

CASTERS

RUBBER WHEEL

## Series 3400 HARDWOOD "Job-Suited" Trucks

- Frame: Heavy 2" thick hardwood
- Deck: Smooth seasoned 1" hardwood
- Pockets: Heavy steel two-way lock bolted
- Superstructures: Removable or screw locked
- 10 Standard Platform Sizes, 10 capacities
- Wheels: Molded-on Rubber or Steel
- Hyatt Bearings, Grease Fittings

This rugged non-tilt type round corner truck is shown with Type A superstructure. It can also be furnished with any of the more than 1000 Thomas other superstructures. The combination will result in a "Job-Suited" truck that will handle your particular load more efficiently.

Write for Catalog No. 43 Type D. Sup.

THOMAS TRUCK & CASTER CO.

4444 MISSISSIPPI RIVER

KEOKUK

When inquiring specify CP8665 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

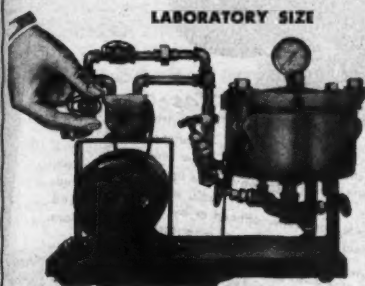


## For Testing or Production → RESULTS are better with SPARKLER

HORIZONTAL PLATE FILTERS

Sparkler units have established a reputation all over America for coping with the most complex filtering problems in laboratory and factory.

These days of diversified chemicals and processes call for a filter of the greatest flexibility of application. That's why Sparkler filters produce such superior quality in so many delicate filtering problems.



Many Sizes of Filters  
1 Pint to 10,000 G. P. H.

Write for any special details.

14 territory filtration engineers—at your service.

**SPARKLER MANUFACTURING CO.**

242 LAKE STREET

MUNDELEIN, ILLINOIS

When Inquiring specify CP8666 — see information request blank, pgs. 2-3

**Surety Suresal**  
PROTECTION  
COSTS LESS BY  
LASTING LONGER



Famous Patented  
**TURN-CUFFS**

Suresal Synthetic  
**SLEEVES**

Suresal Synthetic  
**APRONS**

Cuts up prevent li-  
quids running inside  
gloves or onto arms  
and clothing. Turned  
down, 2" longer pro-  
tective gauntlet.

Protection from dan-  
gers of acids, chem-  
icals, liquids. Shoul-  
der or elbow lengths,  
with various coatings  
available.

Withstand unusual  
conditions. Made in  
three sizes and three  
weights. Superior  
wear and safety ad-  
vantages.

Surety's remarkable Suresal Synthetic provides maximum wear and top  
safety. May we send prices and data on the complete protection line.

Largest and Original Producers of Synthetic Gloves

**THE Surety RUBBER COMPANY**

CARROLLTON, OHIO

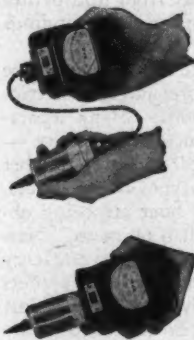
When Inquiring specify CP8667 — see information request blank, pgs. 2-3

JANUARY-FEBRUARY, 1944

## PRODUCTION

"separable type" and connected only to a two conductor electric cord. A 5 ft. cord complete with coupling plug is provided, but a cord up to several hundred feet long (of proper size wire) can be used without introducing appreciable error in the scale reading.

**Description** — Essentially, the tachometer consists of a small generator coupled electrically to an electric meter. Variations in the speed of the generator are positively and accurately determined by the meter. The electrical generator consists of a small permanent "Alinco" magnet motor. It is mounted on precision sealed ball bearings



ELECTRIC  
TACHOMETER

capable of continuous operation at any speed within the limit of the meter. The meter of instrument itself is a rectifier type, including a sturdy D'Arsonval movement. It is capable of standing a momentary overload up to four times the maximum speed indication without damage. The meter is provided with two scales "hi" and "Low". "Hi" scale indicates the maximum reading obtainable. Small switch incorporated in meter case provides for easy changing from "hi" to "low" range. Size of generator only 1 1/8 in. diameter, 3 3/4 ins. long (including 3/4 in. shaft extension) weight 8 oz.

IDEAL COMMUTATOR DRESSER CO., Dept. CP, 5163  
Park Ave., Sycamore, Ill.

When Inquiring specify CP8668 — see information request blank, pgs. 2-3



## A BOOK YOU WILL FIND HELPFUL Just write for it

In this booklet the pH, chlorine, and phosphate control problems of 34 INDIVIDUAL INDUSTRIES are discussed and brief solutions are given . . . 84 pages of information you will find helpful in maintenance of precise process control. It is yours for the asking.

### TAYLOR COMPARATORS

offer many advantages for pH, chlorine, and phosphate control in practically every industry. Molded of durable plastic, they will last a life-time. Accuracy of determination is assured at all times because Taylor Liquid Color Standards CARRY AN UNLIMITED GUARANTEE AGAINST FADING. Extremely easy to use — permit quickest method of determination. Their cost is insignificant compared to the savings they make possible.

See your dealer or write direct.



**W. A. TAYLOR AND CO.**

7306 YORK RD. • BALTIMORE 4, MD.

When Inquiring specify CP8669 — see information request blank, pgs. 2-3

# CAUGHT in an ICY GRIP...



## with C-D/FOG



From an arsenal of fire fighters including such famous names as Fire Guard, Alaskan, and Floafome, General Detroit gives you C-D/Fog.

Newest of carbon dioxide extinguishers, C-D/Fog snuffs out fire by enclosing it in an icy grip. Air cannot reach the flame.

C-D/Fog leaves no stain. It is safe to use on electrical, oil, and gasoline fires. It is equally efficient in hot or sub-zero weathers.

General Detroit's known record in quality mass production assures you prompt delivery for all essential needs.

"Fire Protection is Victory Effort"

## THE GENERAL DETROIT CORP.

Former Name THE GENERAL FIRE TRUCK CORP.

New York • DETROIT • Chicago

West Coast Affiliates: THE GENERAL PACIFIC CORP.,  
SEATTLE • LOS ANGELES • SAN FRANCISCO

Distributors in All Principal Cities

THE GENERAL DETROIT CORP.  
2220 East Jefferson Ave., Detroit, Mich.

Please rush details on C-D/Fog and others in your complete line of fire extinguishers.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

Tear out this simplified coupon and attach to your letterhead.

When Inquiring specify CP8670 — see information request blank, pgs. 2-3

Page 77

## "MUCH BETTER CONTROL OF THE PRODUCT... DESIRED SLURRY FINENESS MAINTAINED"

—when Liquid Screens are used  
as Balancing Units

By using Robins Hydrex Screens as balancing units between two reduction machines, the slurry in a cement plant was maintained at desired fineness; control over size and amount of material was so exact that those two machines were able to operate at maximum efficiency; an entire operation was eliminated—and much more costly equipment was made unnecessary. One Hydrex Screen alone is removing 140 barrels an hour of —20 mesh slurry and returning about 210 barrels an hour of oversize in an enclosed circuit. For details of this installation—or for facts about the numerous other applications of Robins Hydrex Screens in chemical and process plants—write Dept. CP-1. No cost, no obligation.

ENGINEERS • MANUFACTURERS • ERECTORS

**ROBINS  
CONVEYORS**  
INCORPORATED  
Founded in 1890 as Robins Conveying Belt Co.  
PASSAIC • NEW JERSEY

MATERIALS HANDLING MACHINERY

For Material Aid in  
Materials Handling

...It's ROBINS

When inquiring specify CP8671 — see information request blank, pgs. 2-3



## SLY DUST COLLECTOR Saves "Super Suds" KEEPS AIR CLEAN

Soap-laden air is filtered through the cloth bags of this SLY Dust Filter, removing all particles, saving valuable soap, and thoroughly cleaning the air. SLY Dust Filters are suppressing and collecting 111 kinds of dust in 57 industries. Over 5000 installations in operation today. What is your dust problem? Ask for Bulletin 98.

**SLY**

THE W. W. SLY MFG. CO.  
Since 1874

4754 Train Ave., Cleveland 2, Ohio

When inquiring specify CP8672 — see information request blank, pgs. 2-3

## PRODUCTION

### Units for Separation of Dry Materials of Different Electrical Susceptibilities

Available in four different models, including  
one for laboratory use

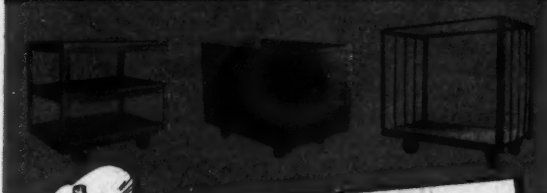
**Uses** — For separation of dry materials having different electrical susceptibilities. A partial list of possible separations include: sphalerite (zinc blend of the rosin type) and barite from iron and copper pyrites, graphite from mica, biotite micas from the muscovites, garnet from iron pyrites and metal particles, silica from fluorspar, steel grindings from abrasive grains.

**Features** — Important improvements are new and exclusive gas filled electrodes which gave a more uniform electrostatic field permitting sharper separations. Many separations are finished on the first rotor. Increased capacity — the required separation can be obtained on fewer number of rolls than was possible with older types of separators. Capacities as high as 5000 pounds per hour are being obtained commercially on material finer than 60 mesh. New power pack or rectifier constantly maintains the efficiency of the separator under all climactic conditions and permits use of ordinary AC circuits. Entirely protected against possibility of shock. Air conditioning no longer necessary with this new separator.

**Description** — Built in four sizes including a laboratory model — B-1-12. Easily accessible outside controls and automatically controlled feed. Once set, the "Electro-Float" requires no further attention. Single power packs can be furnished to handle multiple separator installations. SUTTON, STEELE & STEELE, INC., Dept. CP, Dallas, Texas.

When inquiring specify CP8673 — see information request blank, pgs. 2-3

## IRONBOUND FLOOR TRUCKS



*...ease max-power shortages!*

You can effect savings in time and cost with this diversified line of floor trucks, skid platforms and semi-live skids. Included are table trucks, rack trucks, stake trucks, box trucks and shelf trucks. Skids and semi-live trucks can also be fitted with various superstructures. IRONBOUND units are constructed of steel, wood, or wood and steel to handle any job efficiently—large or small. Special attention is given to running gear to assure effortless, easy movement. Types of wheels available include ni-steel, iron, malleable iron, cast steel, solid rubber, rubber tired or textolite.

IRONBOUND BOX & LUMBER CO.  
35 Hoffman Place, Hillside, N. J.



**IRONBOUND**  
MATERIALS HANDLING EQUIPMENT

When inquiring specify CP8674 — see information request blank, pgs. 2-3

## Meet the carbide kings! Standard and Special DI-MET RESINOID BONDED DIAMOND WHEELS

FAST—COOL—  
LONG LIVED  
PERFORMANCE



*For:* Cutting carbide  
inserts from solid bars in  
a matter of a few seconds.

Quickly grooving chip breakers in single point tools. • Obtaining  
keener, more uniform cutting edges on carbide tipped milling cutters,  
reamers, broaches, counterbores, lathe tools, etc. • Radius grind-  
ing mounted carbide tips—either offhand or by mechanical feed.  
Rapid metal removal on carbide dies, all other carbide applications.

Standard and special wheel types and sizes, recom-  
mended operating procedures and prices contained  
in NEW FREE DI-MET RESINOID BONDED DIAMOND  
WHEEL CATALOG! Write for your copy!

**FELKER MANUFACTURING COMPANY**  
1129 BORDER STREET • TORRANCE, CALIFORNIA  
MANUFACTURERS OF DIAMOND ABRASIVE WHEELS

When inquiring specify CP8675 — see information request blank, pgs. 2-3

## ROSS DRYERS ADVANCED DESIGN

WHY NOT  
GET THESE  
ADVANTAGES

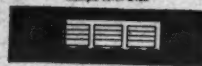
- 1 CONTROLLED  
TEMPERATURE
- 2 CONTROLLED  
HUMIDITY
- 3 CONTROLLED  
AIR MOVEMENT



Patented Dryer



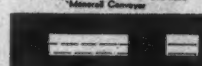
Multiple Batch Oven



Truck Type Tunnel Oven with Floor  
Conveyor



Truck Type Tunnel Oven with Overhead  
Material Conveyor



Straight Pass Conveyor Dryer



Gate for Conveyor and Inclined Entry  
Oven for Batching



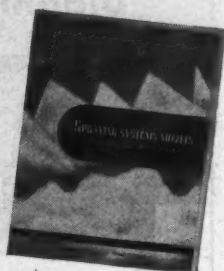
**J. O. ROSS**  
ENGINEERING CORPORATION  
350 Madison Ave., New York 17, N. Y.  
Chicago • Montreal • Detroit

When inquiring specify CP8676 — see information request blank, pgs. 2-3





**READY  
NOW!**



### "This Book Really Gets Down to Cases on Spray Nozzles..."

The way to faster, better and more precisely controlled spraying is shown in this new Spraying Systems catalog. Capacities and spray characteristics are tabulated for each spray nozzle type. Important developments resulting from our 18 years' experience in designing and building spray nozzles are described in detail.

Your free copy is ready now. Write for this catalog today and get ready answers to any of your spraying problems.



**SPRAYING SYSTEMS COMPANY**

4037 West Lake Street Chicago 24, Illinois

**SPECIALISTS IN THE DESIGN AND  
MANUFACTURE OF SPRAY NOZZLES**

When inquiring specify CP8677 — see information request blank, pgs. 2-3



**USE THE *Right* LATHE  
FOR EVERY JOB**

Time, material, and manpower can be saved for vital work if you use the *right* lathe for every job. South Bend Lathes have the speed, accuracy, and ease of operation that increase output, hold close tolerances, and conserve manpower for more efficient production on a wide variety of jobs. Write for a catalog.



**"HOW TO RUN  
A LATHE"**

A 128-page book on lathe operation and care. Size 5 1/2 in. x 8 in. Send 25c in stamps for your copy.

**SOUTH BEND  
LATHE WORKS**  
SOUTH BEND 22, IND. LATHE BUILDERS FOR 37 YEARS

When inquiring specify CP8678 — see information request blank, pgs. 2-3

## PRODUCTION

### Hydraulic Jacks In 30 & 50 Ton Models

*High and Low speed pumps; two  
release valves on opposite sides  
of base*

*Uses — For moving heavier weights  
faster — two models provide for handling  
thirty tons and fifty tons respectively*



HYDRAULIC JACKS

tively. Used advantageously where crane may be unavailable.

**Features** — The jacks have two release valves located on opposite sides of the base for the convenience of the operator. Either release screw controls ram return.

**Description** — Powerful hydraulics have high and speed pumps. Pumps can be operated singly or in unison. Base is made of special analysis solid steel bar stock adding to load bearing security. Either release screw controls ram return. Easy carrying grip is integral part. Inserting the jack lever through both pump handle sockets permits carrying by two men. Model 30 HJ — 30 tons — low height 11 ins., hydraulic lift 7 ins., weight 65 lbs., Model 50 HJ — 50 lbs. — low height 12 ins., hydraulic lift 7 ins., weight 115 lbs. Complete information regarding this equipment is available upon request.

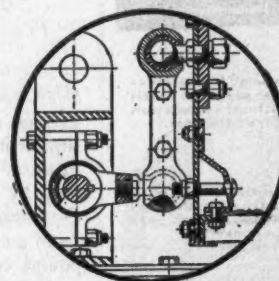
TEMPLETON, KENLY & CO., Dept.  
CP, 1020 So. Central Ave., Chicago, Ill.

When inquiring specify CP8679  
— see information request blank, pgs. 2-3

## BIGGER OUTPUT WITH SECO VIBRATING SCREENS

—And here, exactly, is why.

The body on a SECO is not resiliently connected to the base. Where resilient connections are used, there is, although invisible to the eye, a slight softening of the action of the gyrating body at the top and bottom of its stroke.



Note in the drawing the cast links that connect the body to the base. These can neither stretch nor compress, so there is no softening in the sharp, positive, circle throw motion of a SECO.

This resulting sharper action is what drives material more thoroughly thru the meshes, and consequently improves sizing and capacity, because the screening surfaces are kept clear.

SECO screens come in single and multiple decks in sizes from 18" x 36" to 5' x 16'. The amplitude of vibration is permanently machined on the eccentric shaft, but is varied to suit the individual screening job requiring more or less amplitude for fine or coarse, light or heavy material.

We would be glad to send you a descriptive catalog, which also shows mechanical details.



## Screen Equipment Co., Inc.

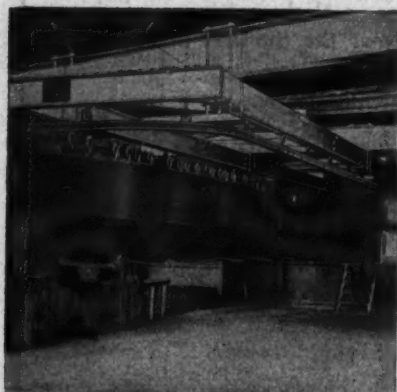
9 Lafayette Ave.

Buffalo 13, New York

When inquiring specify CP8680 — see information request blank, pgs. 2-3

# AMERICAN MONORAIL

for EASY Riding,  
JOLT FREE Handling



Special buckets deliver prepared batch without segregation of the mix.

Continuous delivery of drums with automatic switch off system.



In addition to smooth, quick, efficient and economical handling, American MonoRail Overhead Handling Equipment eliminates floor congestion. It relieves your men from lifting and carrying—enabling them to give full time and skill to production.

Without obligation, an American MonoRail Engineer will gladly show you many other advantages of this equipment. Write today.

**THE AMERICAN MONORAIL CO.**

13109 Athens Avenue

Cleveland, Ohio

When inquiring specify CP8681—see information request blank, pgs. 2-3

## PRODUCTION



MOTOR DRIVEN STAPLER CLOSES BAGS QUICKLY

### Motor Driven Machine Forms And Drives Staples from Coil of Wire

Foot pedal control — 10 lb. coil of wire makes 30,000 staples

Uses — For closing bags used in packaging confections, various materials and products and for potato chips and similar items. Mounts bags on display cards.

Features — Foot pedal control. Speed of machine limited only by dexterity of operator.

Description — Simultaneously forms and drives staples from a coil of light flat wire mounted on the machine. Ten pound coil is adequate for 30,000 staples at approximate cost of 5c per one thousand. Further information on request.

ACME STEEL CO., Dept. CP, 2840 Archer Ave., Chicago, Ill.

When inquiring specify CP8682—see information request blank, pgs. 2-3

### Goggle Cleaning Cabinet Holds Cleaner Vials, Wiping Tissues

Easily mounted in convenient location for use as may be required



GOGGLE CLEANING UNIT

Fog-pruf — an efficient lens cleaning and antifogging agent and optical wiping tissues. Two vials of the cleaning agent are concealed within the dispensing block permitting the cleaning of two pair of goggles at once. A tap of either button on the dispenser sprays Fogpruf on the lens. Cleaning tissues are withdrawn from an opening in the top of the dispensing station. Slide panel permits quick replacement of cleaning agent and tissues. An

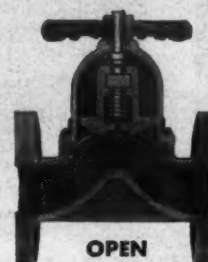
Uses — Designed to provide an easy means to clean goggles thoroughly and keep them clean at all times.

Features — Unit may be mounted at convenient place in plant. It is sometimes mounted on travelling goggle dispensing carts.

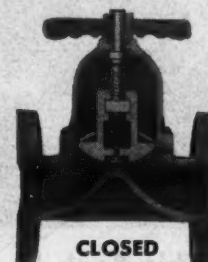
Description — Compact cabinet is equipped with vials of

## GRINNELL-SAUNDERS

### Diaphragm Valves



OPEN



CLOSED

Unique Diaphragm Feature isolates working parts from the fluid; permits positive closure even when foreign matter is trapped; eliminates refacing and reseating; assures streamline passage of fluids.

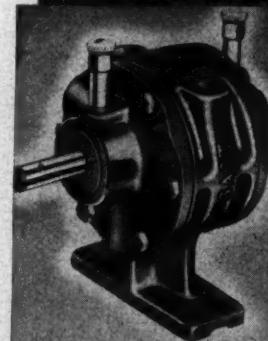
Write for Catalog 1-S for complete description. Grinnell Co., Inc., Executive Offices, Providence, R. I. Branch offices in principal cities.

Diaphragm Materials supplied in several grades of tough, resilient compounds to withstand wear, corrosion, erosion and limited high temperatures.

**GRINNELL**  
WHENEVER Piping IS INVOLVED

When inquiring specify CP8683—see information request blank, pgs. 2-3

## Solve EXPLOSION-PROOF problems with GAST AIR MOTORS



SPECIAL ADVANTAGES OF GAST AIR MOTOR

- No reciprocating parts or springs.
- Automatic take-up for wear.
- Low maintenance—cannot be burned out.
- Positive starting in any position.
- Exceptional compactness for power developed.

**GAST**  
ROTARY AIR  
MOTORS & PUMPS

### ★ COST MUCH LESS

Than explosion-proof electric motors

### ★ VARIABLE SPEED

over a wide range  
Up to 3,000 R.P.M.

On explosion-proof application where compressed air is available the Gast Air Motor provides power at much lower first cost and practically no service cost (based on year record).

The Gast Air Motor is particularly applicable to war-production jobs such as driving mixing equipment in munitions plants, process industries, etc. It delivers from 1/20 to 1 H.P.

Because it employs the same Rotary principle as the famous Gast Air Pumps, the Gast Air Motor offers the same economy and long life advantages.

Write for FREE Catalog on GAST AIR MOTORS — PUMPS — COMPRESSORS

Contains full descriptions, engineering data, and many application photographs on the complete Gast line which includes 12 sizes, Gast Rotary Air Pumps, 1/2 to 23 C.F.M. Pressure up to 30 lbs.

**GAST MFG. CORP.**  
101 Hinkley Street  
Eaton Harbor, Michigan

When inquiring specify CP8684—see information request blank, pgs. 2-3





## PRELUDE TO BATTLE

Reminders of an LST being used to deliver supplies for American forces in the Central Salinas. The American carrier provided the capture of nearby islands.

• Thousands of miles and weeks of travel from the production lines, supplies must be delivered safely before a battle can begin. That's why Army and Navy contracts frequently specify packing methods and materials—including steel strapping—for the extra margin of shipping safety.

No matter what your product or your shipping problem may be, Signode package and carloading engineers stand qualified to give you practical shipping suggestions, as they have for so many others.

Remember, a nearby Signode representative is ready to help assure safe delivery of your vital war materials.

*Signode Steel Strapping Meets All Federal Strapping Specifications*

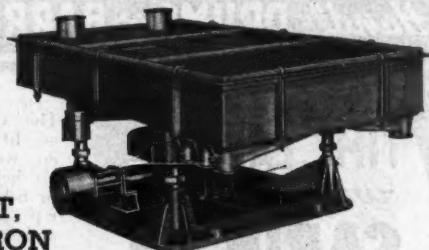
# SIGNODE

STEEL STRAPPING COMPANY

2658 N. Western Ave., Chicago 47, Ill.

Brooklyn, N. Y.: 391 Furman St., San Francisco, Calif.: 477 Bryant St.

When inquiring specify CP8685 — see information request blank, pgs. 2-3



## SPROUT, WALDRON PERFECT CIRCLE SIFTER

This versatile SPROUT, WALDRON unit handles hundreds of different materials. The circular motion is ingeniously controlled. Dead spots eliminated—full area, accurate screening. Lower cost.

Screen box, dust-tight and adjustable for pitch, easily divided to permit two products to be sieved at one time without risk of contamination. Constant tapping of rubber balls prevents clogging of screen. Separate frame carries bolting wire or silk—a decided advantage where screening requirements are subject to change.

Outlets can be placed to suit plant installation.

SPROUT, WALDRON Perfect Circle Sifters available in several sizes. 1 H. P. motor.

# SW

**SPROUT, WALDRON & COMPANY**  
Manufacturing Engineers Since 1866  
156 Sherman St.  
Muncy, Penna.

When inquiring specify CP8686 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

attachment for padlock is provided to prevent theft of the dispensing vials and other supplies. Descriptive booklet on request.

MINE SAFETY APPLIANCES CO., Dept. CP, Braddock, Thomas & Meade Sts., Pittsburgh 8, Pa.

When inquiring specify CP8687 — see information request blank, pgs. 2-3

## Handy Flaring Tube Kit Flares Plastic Tubing Quickly

*Produces strong "double flare" on all popular size tubing; both .062, .031 walls*

**Uses** — This flaring tool is designed specifically for plastic tubing and produces the approved type double thickness flare for connecting this tubing with flare fittings.

**Features** — Makes joints having 35% greater resistance to pull-outs. Retains its shape after flaring — does not snap back. Protects the wall of the tubing against being squeezed too thin in flaring. Convenient to use right on the job and can be operated in very close quarters.

**Description** — One tool handles four popular sizes of tubing:  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1" OD. Designed especially for .062 wall tubing, will also handle .031 wall. Flare produced is called double flare because the plastic tubing is folded back at the ends to form a flare with double thick, double strength walls. Complete kit consists of flaring tool bar, yoke with swivel cone and four adapters. Bulletin 338 gives complete details.

IMPERIAL BRASS MFG. CO., Dept. CP, 1200 W. Harrison St., Chicago 7, Ill.

When inquiring specify CP8688 — see information request blank, pgs. 2-3

## Fires AREN'T BORN...THEY'RE MADE

Today, careless fires in war plants put a crimp in production that may be the means of costing lives of many of our soldiers.

Justrite Safety Products guard against these careless fires by providing safe ways to handle and store flammable materials. Justrite Safety Lanterns provide safe, dependable light even in Methane Gas and Air Mixtures.

*Write for details of Justrite Safety Products.*

JUSTRITE MANUFACTURING CO., 2052 Southport Ave., Chicago, Ill.

# JUSTRITE Safety

SAFETY CANS • FILLING CANS • OILY WASTE CANS  
APPROVED SAFETY ELECTRIC LANTERNS

When inquiring specify CP8689 — see information request blank, pgs. 2-3



**Safety Can** . . . is the real way to pour "touchy" liquids. Non-Drip spout assures steady, even flow with good "cut-off." Approved by Underwriters' Laboratories, Inc., and Associated Factory Mutual Fire Insurance Companies.

**Twin Bulb Electric Lantern** . . . used safely wherever light is needed. Approved by Underwriters' Laboratories, Inc.



## 5 YEARS EXTRA USE for 5¢ EXTRA COST!



**HARPER** fastenings add years and years to the service life of products and equipment on which they are used . . . and do it at a trifling extra first cost. They insure your product against the ravages of rust and corrosion. They resist numerous acids and alkalis . . . ocean salt . . . tropic sweat. They save hours of time and labor required to replace rusted common steel bolts . . . prevent failure of vital equipment . . . keep production rolling . . . are repeatedly removable. In certain alloys they are non-magnetic and non-sparking. 4320 items in stock. Write for 4 color catalog.

**The H. M. HARPER COMPANY**  
2644 FLETCHER ST. • CHICAGO 18, ILL.  
BRANCH OFFICES: New York City, Philadelphia, Los Angeles, Houston, Cincinnati, Milwaukee. Representatives in Principal Cities

# HARPER

EVERLASTING FASTENINGS

When inquiring specify CP8690 — see information request blank, pgs. 2-3

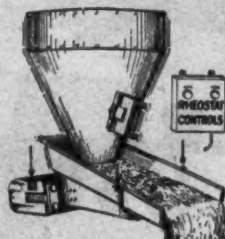
Brass  
Bronze  
Copper  
Everdur  
Monel  
Stainless

## POSTWAR-INESS

Be sure your Postwar plans include the easy, economical way of handling bulk materials — by

### SYNTRON

*"Electronic-Controlled Vibration"*



ELECTRIC VIBRATORS  
VIBRATING FEEDERS  
FEEDER MACHINES  
WEIGHING FEEDERS  
VIBRATING PACKERS

Write for a copy of our new 64 page catalog — illustrating many ways old, obsolete methods can be changed to advantage.

SYNTRON COMPANY

110 Lexington Ave.

Homer City, Pa.

When inquiring specify CP8691 — see information request blank, pgs. 2-3

## Simplified CONTROL AND SHUT-OFF OF VOLUME AND PRESSURE

Here is a brand new 36-page catalog which features the complete line of R-S Butterfly Valves. It is profusely illustrated with both manual and power operated valves for pressures from 15 to 900 psi. It contains detailed specifications, applications and descriptions of new type valves. Among the new type valves is the dual valve, designed for a high pressure drop and small volume or low pressure drop and large volume. The three-way valve, designed for mixing and quick interchange service is also illustrated.

Write on your company's letterhead for a copy of Catalog No. 14-B.

VALVE DIVISION

R-S PRODUCTS CORPORATION • 4931 GERMANTOWN AVE., PHILADELPHIA 44, PA.

## Streamlined BUTTERFLY VALVES

When inquiring specify CP8692 — see information request blank, pgs. 2-3

Page 82

## PRODUCTION

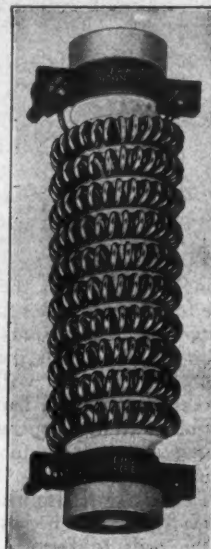
### Radiant Heater and Resistor

Withstands high temperatures; made in range of 32 to 220 volts

Uses — In annealing ovens, electric furnaces — wherever high temperature radiant heat is required. Also serves as a resistor. In use for some time in various plants throughout the country.

Features — Core will not deteriorate at temperatures up to 1700 degrees F.

Description — Element consists of helical coil of nickel chromium wire wound spirally around a refractory core. The binding posts and straps are of monel metal or nickel chrome, depending upon the user's specifications. Obtainable in arrange of from thirty-two to two hundred and twenty volts. Complete information on request concerning this unit known as "Regan Radiant Heater."



HEAT COIL

TECHTMANN INDUSTRIES, INC., Dept. CP, 828 N. Broadway, Milwaukee, Wis.

When inquiring specify CP8693 — see information request blank, pgs. 2-3

## Keeping Oil Flowing with Ric-wil Insulated Conduit



**RIC-WIL PREFABRICATED CONDUIT FOR PIPING OIL—liner type insulation.**  
A moulded liner insulates pipes from the exterior but not from one another, permitting a steam or hot water line to maintain desired temperature in other lines. For underground or overhead systems.



**RIC-WIL PREFABRICATED CONDUIT FOR PIPING OIL—filler type insulation.**  
Serves the same purpose as conduit described above, except that a metal or composition jacket surrounds the pipes, and filler type insulation is packed into space between jacket and conduit.



**RIC-WIL TILE CONDUIT FOR PIPING OIL UNDERGROUND.** Insulation is diatomaceous earth lining, moulded and keyed to inside of tile. Pipes insulated from exterior, but not from each other. Also available in Super-Tile or Cast Iron.



**RIC-WIL PREFABRICATED STEAM CONDUIT.** Prefabricated complete units—pipe as specified, single or multiple. Filler type insulation. For underground and overhead installation.



**RIC-WIL STEAM CONDUIT—UNDERGROUND.** Tile housing same with filler type insulation applied at job site. For single or multiple pipe systems. Also available in Super-Tile or Cast Iron, to withstand heavier than ordinary surface loads.

**RIC-WIL** INSULATED PIPE CONDUIT SYSTEMS  
THE RIC-WIL COMPANY • CLEVELAND, OHIO

When inquiring specify CP8694 — see information request blank, pgs. 2-3



You'd be surprised at the versatility of Airetool Tube Cleaners . . . of the quick, efficient way Airetool has solved many SCALE IN TUBES problems, and to the many uses to which they are adaptable.

Airetool Tube Cleaners will remove foreign deposit from straight or curved tubes. Airetool's new form cutter heads do the job faster without damage to tubes. Airetool's motor has 28% greater power to remove severe incrustations. Made in sizes 1/2" to 24" I.D. air, steam or water driven. Write for details.

### AIRETOOL TUBE EXPANDERS

Precision made, long-lasting are made for a wide variety of tube and pipe sizes. Send for information.

**AIRETOOL** MANUFACTURING COMPANY

500 Airetool & Yost — Superior Factory Bldgs.  
Springfield, Ohio

When inquiring specify CP8695 — see information request blank, pgs. 2-3

## Handle DRUMS or BARRELS?

### SAVE TIME, LABOR with a SABIN One-Man TRUCK

The trucker does no lifting, carries no weight, needs no helpers. Drum or barrel is picked up automatically and smoothly.

**THIRD - WHEEL FEATURE** — exclusive with the Sabin Truck, assures dependable load support and balance and enables loaded truck to stand alone.

**WRITE FOR FREE BULLETIN.**

**AGENTS WANTED**  
This fast selling truck offers you a real opportunity. Send us your inquiries.

The  
**Sabin Machine Co.**  
6536 CARNEGIE AVE.  
CLEVELAND, OHIO

*One Man  
handles up to  
800 lb.  
loads*

When inquiring specify CP8696 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## NEW PORTABLE CONVEYOR SPEEDS PACKAGE HANDLING



Buschman ROLL-OR-WHEEL portable conveyors speed package handling in production, or to and from loading platforms, trucks, box cars, stockrooms and warehouses.

In 10-foot, straight or curved sections — coupled to any length — roller or wheel equipped — easel, caster or tripod support — quickly, easily set up, or moved from place to place where needed. Ideal for narrow aisles, crowded quarters. Conserve manpower for the home stretch ahead!

Write for Bulletin No. 8, showing many applications.

**THE E. W. BUSCHMAN COMPANY, INC.**

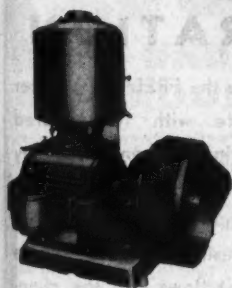
413 NEW STREET

CINCINNATI, O.

When inquiring specify CP8607 — see information request blank, pgs. 2-3

## VACUUM TROUBLES END WHERE

### BEACH-RUSS PUMPS BEGIN



Because their exclusive rotary piston design, unique lubricating system, rugged construction and slow operating speed assure

1—Highest mechanical efficiency at sustained high vacuum in wet or dry vacuum processes.

2—Long, trouble-free, quiet operation.

The war's production demands have truly proved the superior performance of Beach-Russ High Vacuum Pumps under difficult conditions. Bulletin No. 75 tells the inside story.

## BEACH-RUSS COMPANY

Vacuum Pumps • Compressors • Liquid Pumps  
46 CHURCH ST. NEW YORK 7, N. Y.

When inquiring specify CP8098 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

### Acid Resistant Fiber Pipe For Industrial Applications

*Made of cellulose fiber, impregnated with coal tar pitch*

**Uses** — These non-metallic pipes are for drain and sewer and similar applications. Specified for drainage where tight joints are necessary for wastes that are corrosive to metallic and concrete pipes. Used by oil companies in connection with salt water disposal.

**Features** — Non-metallic, made of cellulose fiber, impregnated with coal tar pitch.

**Description** — This pipe is formed in special machines to develop a homogeneous structure, (not laminated), of fibres oriented in three planes so that the structure of the pipe is uniform throughout. After forming and drying, the pipe is subjected to high vacuum and then thoroughly impregnated with coal tar pitch. Finished pipe by weight is 25% fiber and 75% pitch. Resistant to most dilute organic acids, alkalis and salts found in industrial wastes. Very low friction losses. Mechanical strength adequate for all design purposes. Catalog Number 302 gives complete specifications and directions for assembly, installation.

FIBRE CONDUIT CO., Dept. CP,  
Orangeburg, N. Y.

When inquiring specify CP8609  
— see information request blank, pgs. 2-3

### Injector Spray Nozzle

*Full cone spray — highly uniform degree of atomization; in brass, steel etc.*

**Uses** — For use in gas washers and similar applications. Water and other liquids of similar viscosity may be handled.

**Features** — Concentrated narrow cone nozzle provides high degree of impact for any given pressure. When required an efficient syphoning action may be obtained. Removable internal vanes permit easy replacement.

**Description** — Made of brass, steel, Monel metal and stainless steel. Wide range of sizes each having definite performance characteristics. For example, if a process requires delivery of a liquid under 40 lbs. pressure at a rate of 3 gpm and a spray angle of 30, a stock size injector type nozzle may be had to perform exactly in this way. Technical reference catalog available on this and other nozzles.

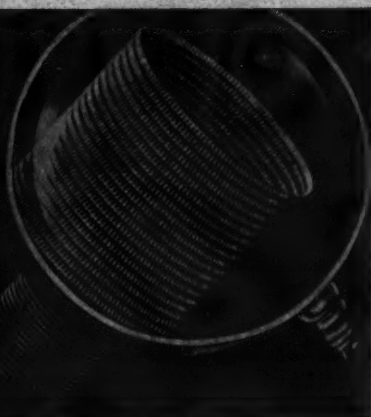
SPRAYINGS SYSTEMS CO., Dept. CP,  
4037 West Lake St., Chicago, Ill.

When inquiring specify CP8700  
— see information request blank, pgs. 2-3

## PREVENT

# Rust. Scale. Dirt

FROM CLOGGING  
STEAM EQUIPMENT



## YARNWAY STRAINERS

"The Screen's the Thing"

- A High Grade Monel Woven Wire Basket with mesh fine enough to catch the dirt — yet ample free area for passage of clean condensate, oil and other fluids.
- Body Cadmium Plated Inside and Out for Protection Against Corrosion.
- Readily Removed Steel Blow-Off Bushing.
- Bushing Automatically Aligns Screen.
- Thousands in Use — Sold by Over 100 Mill Supply Houses.
- 6 Sizes 1/4" to 2" for Pressures up to 600 Lbs.

See Your Supply House or write for Bulletin S-200

**YARNALL-WARING COMPANY**

125 MERMAID AVENUE

PHILADELPHIA 18, PA.

## YARNWAY STRAINERS

When inquiring specify CP8701 — see information request blank, pgs. 2-3



Armstrong traps on chlorobenzene stills, in phenol plant.

## 16 Armstrong Traps save 800 gals. fuel oil per week in chemical plant

Chemical plants represent another industry which uses thousands of Armstrong inverted-bucket steam traps to save fuel, money, heating time, maintenance and manpower.

A typical example from our files is that of a chemical manufacturer in Iowa, which effected a cut in fuel consumption from 1,500 to 700 gallons a week by the installation of 16 Armstrong traps. The savings in fuel are \$2,500 a year. In addition, the management reported a reduction in boiler capacity requirements from 125 to 80 HP, and faster heating and more uniform temperatures of steam-heated kettles and other processing equipment.

Armstrong traps not only pass condensate as fast as it forms, without leakage of steam, but also eliminate air from the system and have the ability to handle all ordinary sludge and sediment. Armstrong traps do this through a combination of design features found in no other method of draining condensate. The patented free-floating valve and other engineering components insure freedom from wire-drawing in the valve orifice, permit holding tight against vacuum, and insure long life with negligible maintenance. Considerably over a million in use. Available in straight-through, angle and vertical piping styles, in all sizes and pressures.

The Armstrong Trap Book contains valuable data on trap operation, installation and service. We'll be glad to send you a copy.



**ARMSTRONG MACHINE WORKS**  
880 Maple Street Three Rivers, Michigan

**Armstrong**  
STEAM TRAPS • AIR TRAPS • PURGERS • HUMIDIFIERS

When inquiring specify CP8703 — see information request blank, pgs. 2-3

## PRODUCTION

### Safety Drum Opener Saves Hands

*Folds cut edges close to barrel; permits drums to be re-used; easily resharpened*



DRUM OPENER

resharpened when necessary. Descriptive folder sent on request.

MERRILL BROTHERS, Dept. CP, 36 Caspian St., Maspeth (Brooklyn), N. Y.

When inquiring specify CP8703 — see information request blank, pgs. 2-3

### Rubber Pouring Buckets for Safe Handling of Acids, Explosives

*In semi-flexible and flexible types, three gallon capacities, reinforced bead on base for safe grip*

**Uses** — For safe and economical handling of acids, corrosives and liquid high explosives. In plants manufacturing storage batteries, heavy chemicals, fire extinguishers, rayon, paper, sulphite pulp, dye houses, tanneries.

**Features** — New bucket in this line (especially developed for arsenals and shell loading plants) is made in a soft rubber compound or about 60 durometer hardness and is so flexible that it can be easily crushed and any solidified liquid cracked loose and readily removed. The bucket will not crack or break during rough usage. Secure anchorage of handles and reinforced gripping bead at the base prevent spilling or injury to workmen.

**Description** — Standard "flexite" bucket designed and recommended for acids and corrosives is semi-flexible. Taper shape for easy nesting, base measures 9 1/4 inches in diameter. Bucket at top rim is 11 3/8 in. diameter from ear to ear. Sprout extends out 2 3/8 ins. Correctly shaped pouring spout permits a narrow stream for pouring into small receptacles and guards against a wide spray which might splash on worker's clothing. Full three gallon capacity, weighs 3 1/2 lbs. color, black. The soft rubber bucket previously mentioned is quite similar in appearance and general specifications except for the degree of rubber hardness. Handle on this bucket is lead coated to prevent corrosion. All buckets have capacity scale molded on inside to provide an additional margin of safety and protect against bucket overloading. Graduate marks are placed so that liquid line is two inches from top when bucket is filled to full three gallon capacity. On standard bucket handle with rubber covering over steel is available in addition to lead covered type. Hard rubber funnels and dipers are also available. Literature on request.

B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8704 — see information request blank, pgs. 2-3

## Batch or Continuous? Real Benefit for Your Process

in  
**ABBÉ**  
Ball or Tube  
MILLS

You'll get more production at lower cost — better grinding or processing of wet or dry materials in any quantity — from Abbé Pebble, Ball, Rod or Tube Mills. Investigate their performance features.

Write  
for  
Catalog  
No. 55



**ABBÉ ENGINEERING CO.**

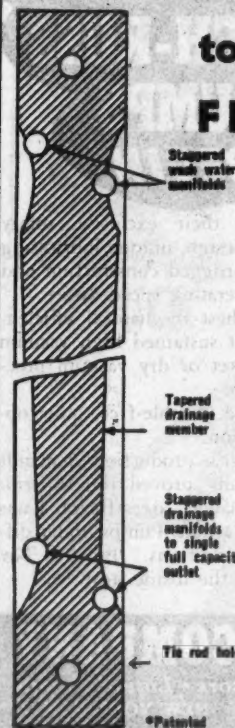
46 CHURCH STREET NEW YORK 7, N. Y.

Mills • Mixers • Sifters for Any Process

When inquiring specify CP8705 — see information request blank, pgs. 2-3

## The Better Filter Plate

to produce better  
**FILTRATION**



Use the FREEFLOW Filter Plate with its tapered drainage channels. They provide ever-increasing space for the ever-increasing volume of filtrate as it flows into the channels. Just like a river bed. Made to fit all standard filter presses and of several different kinds of wood and of Bakelite. In writing describe materials to be handled.

**Filter Media Corp.**  
Irvington-on-Hudson, N. Y.  
Chicago Salt Lake City

When inquiring specify CP8706 — see information request blank, pgs. 2-3



Here is Your **FIRST** List!

✓ and recheck!

**M.C. STOCK**—for immediate delivery

- 1—PREMIER S. S. COLLOID MILL; 5½" rotor
- 1—GEHRICH DRYER; with trucks, 5' 6" x 13' 5"
- 2—LOUISVILLE TUBULAR DRYERS; 6' x 35'
- 1—SIMPSON INTENSIVE MIXER; No. 2, 10 HP, AC
- 2—ALBERGER SURFACE CONDENSERS; 1520 sq. ft. 920 BRASS TUBES
- 3—ROYLE RUBBER EXTRUDERS; No. 1, 3, 4
- 2—THROPP RUBBER MILLS; 36", 42"
- 2—SHRIVER, 24", IRON FILTER PRESSES; 24 Chamber, open delivery
- 1—DEVINE VACUUM ROTARY DRYER; 5' x 30'

### FT. WASHINGTON LIQUIDATION

- 1—STEEL, JKTD., BRICK LINED, SECTIONAL, ACID STILL; 5' dia. x 10' 3" deep
- 2—SHEET STEEL VACUUM STILL POTS; 8' x 8½'
- 4—JKTD. & AGTD. CRYSTALLIZERS; 28" x 42" x 16' L.
- 4—STEEL CONDENSERS; MOUNTED IN STEEL TANKS, 54½" x 8½"
- 1—HYDRAULIC PRESS; DOWN RAM, 62" x 62"
- 2—JKTD. ROTARY DIGESTORS; 6' dia. x 13' L.
- 2—ROTARY ATMOSPHERIC DRUM DRYERS; 4' x 12'
- 1—RAYMOND, OO, MILL, M. D. — with collectors
- 1—GRUENDLER, No. 4A HAMMERMILL
- 1—SCHUTZ O'NEILL, 20" LIMITED PULVERIZER complete with parts and motor

IT'S INVENTORY TIME!  
What are you going to need?  
What items should be disposed of?

**FIRST**  
**MACHINERY**

EAST RIVER DRIVE & EAST 9th STREET, NEW YORK

When inquiring specify CP8707 — see information request blank, pgs. 2-3

**10,000**  
**ITEMS UNDER**  
**ONE ROOF!**

**ONE QUICK, CENTRAL**  
**SOURCE FOR EVERYTHING**  
**IN ELECTRONICS AND RADIO**

The world's largest stocks are centralized in this arsenal of supply. Over 10,000 items . . . for laboratory, production, maintenance, training, combat. That means quick delivery on vital needs for the Armed Forces, Government, Industry. Our procurement experts, with latest "supply data" on all leading products, simplify and expedite all your purchases. Whatever you need in electronics and radio . . . save time—call Allied first. Thousands do.

Write, Wire or Phone Haymarket 6800

**ALLIED RADIO CORP.**  
633 W. Jackson, Dept. 17-A-4, Chicago 7

**ALLIED RADIO** *Delivers the Goods*

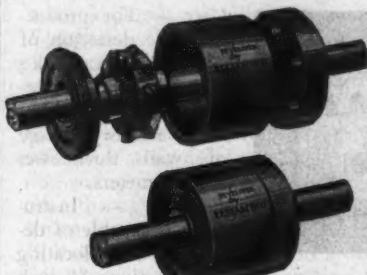
When inquiring specify CP8708 — see information request blank, pgs. 2-3

JANUARY • FEBRUARY, 1944

### PRODUCTION

## Lubricated Centrifugal Clutch Engages, Disengages Automatically

*Operates horizontally or vertically with equal efficiency*



CLUTCH ASSEMBLY . . . flyweights, hub and outer shell.

**Uses** — Either as a coupling between shafts or as a driving pulley or gear in a transmission, as a starting cushion between power units and driven mechanisms.

**Features** — Works equally well in either direction (reversible) and is

"set" to engage or release at a given speed.  
**Description** — Unit consists of a partially filled oil chamber fitted with a freely rotating hub, which carries a series of movable wedge shaped flyweights. As the hub revolves these weights fly outward and engage the internal rims of the outer case binding the hub and shell into a functionally solid pulley or coupling. These clutches known as "TORKONTROL" built in sizes from ¼ HP to 500 HP for both built-in and general application.

AMALGAMATED ENG'G. & RESEARCH CORP., Dept. CP, 100 W. Monroe St., Chicago, Ill.

When inquiring specify CP8709 — see information request blank, pgs. 2-3

## NOW GLASS TANKS

- • • that are impervious to acids, alkalis, chemicals of almost every kind.
- • • that can safely handle many of the toughest solutions — even hot chromic acid
- • • and that are free from the priority limitations now placed on tanks of many other materials.

Find out about **GLASS TANKS BY "PITTSBURGH"** . . . today! Send the coupon for free literature and complete information.

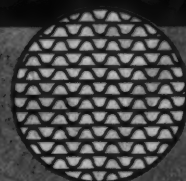
Pittsburgh Plate Glass Company  
2044-4 Grant Building, Pittsburgh, Pa.  
Please send me, without obligation, free literature on Glass Tanks by "Pittsburgh."

Name . . . . .  
Address . . . . .  
City . . . . . State . . . . .

**PITTSBURGH PLATE GLASS COMPANY**

When inquiring specify CP8710 — see information request blank, pgs. 2-3

Oceco Flame Arrestor Element photographed against the light showing the absence of obstruction and easy inspection.



Above—section of Oceco Flame Arrestor Element—actual size—and at the left, the rigid semi-steel housing, with "element" partially removed.

## OCECO Flame Arrestors with their Vertical Straight Through Passages

- 1 **Positively prevent flame passage**
- 2 **Permit free tank venting**
- 3 **Minimize entrainment of condensates**
- 4 **Assure easy quick inspection**

• As thousands of users know, Oceco Flame Arrestors give real protection for tanks storing volatile liquids. The corrosion resisting "bank" or "element" assembled from flat and corrugated sheets of aluminum, arranged alternately to form vertical straight through passages is an absolute flame stop, — yet assures free tank breathing with minimum pressure drop. The entire absence of screens and tortuous channels minimizes entrainment of condensation and clogging, avoiding tank "cave-ins" and "blow-outs", — and permits easy inspection simply by looking through. Rigid gas-tight semi-steel housings of Oceco Vent Units provide maximum protection against the heat of nearby fires, not afforded when housings of lower melting point material are used.

Our recently completed Catalog No. V-50 gives complete details . . . Send for a copy today!

**OCECO**

Division of

**THE JOHNSTON & JENNINGS COMPANY**

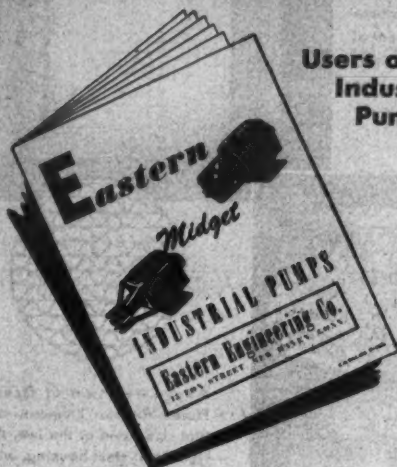
368 Addison Road Cleveland, Ohio

Engineering and Sales Representatives in the Principal Cities

**FIRE PREVENTION AND VAPOR CONSERVATION EQUIPMENT FOR VOLATILE LIQUID STORAGE TANKS**

When inquiring specify CP8711 — see information request blank, pgs. 2-3

# ATTENTION



**Users of Small Industrial Pumps**

Eastern Engineering Company, long a leading manufacturer of small pumps for big jobs, has brought out many new models. Eastern's new catalog, just published, belongs in the reference files of every manufacturer who uses pumps. Sent free on request. A recent and sound trend has been toward smaller pumps running at higher speeds. Their small size and superior construction — including corrosion-resistant materials and higher pressures — make them readily adaptable for incorporation in many assemblies. Included in the new catalog are newly developed multi-stage centrifugal and rotary vane type pumps. Write for your copy now.

## HUSKY MIDGET PUMPS By EASTERN

Built for dependable, efficient performance — light weight, for small space — these rugged little pumps will do that difficult job superbly.

### Eastern Midget and Midget Industrial Pumps

Centrifugal, Single and Multi-Stage, Rotary Vane, or Gear Models with Electric Motor (1/100 to 3/4 H.P.). Compressed Air or Belt Drives. Pressures to 200 lbs. P.S.I. — Volume to 60 G.P.M. — Weight from 3 lbs. Pump Construction of Cast Iron, Bronze, Monel Metal, Stainless Steel, Hastelloy and other corrosion-resistant alloys for centrifugal types. For a prompt recommendation on the best pump for the job, send us the details of your application.

**Eastern Engineering Company**  
49 FOX STREET  
NEW HAVEN 6, CONNECTICUT



When inquiring specify CP8712 — see information request blank, pgs. 2-3

## PRODUCTION

### Electronic Tube Flaw Detector

*For production line use in revealing flaws in nonmagnetic metallic tubing*



DETECTOR ... reveals tube flaws

wall thickness in depth, even though they are on the inside of the tubing and do not appear on either surface. Especially desirable for testing tubing for coolers and heat exchangers before installation, thus preventing flow failures in the field.

**Description** — The tubing to be tested is fed through a coil box, coils of which are arranged in such a way that they surround the tubing. After the circuit constants for the particular size of tubing are set by means of selector switches located on the panel of a control unit, power is applied to the coils which in turn induce eddy currents in the tubing. A flaw in the tubing causes changes in these eddy currents. An electronic circuit in the control unit detects these changes and energizes a signal relay, thus disclosing to the operator the existence and location of the flaw.

**Description** — The detector consists of a control unit, which is standard for testing various sizes of nonmagnetic tubing, and a coil box which accommodates any one specific size of round, straight tubing of uniform outside diameter from one quarter to two inches, inclusive. Additional coil boxes, which are fully interchangeable as to mounting dimensions, and cable terminals, are available to accommodate any size tubing within the dimensions specified. The complete instrument is small, light and easily installed. Power supply required for the electronic units is 100-125 volts, 60 cycles.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

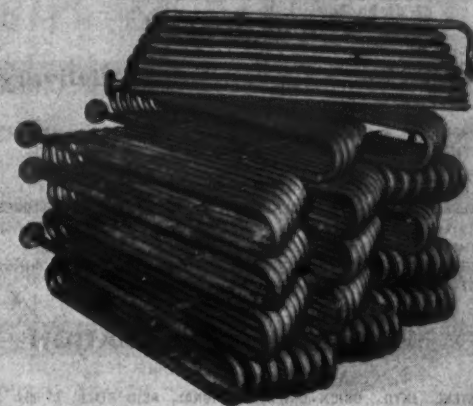
When inquiring specify CP8713 — see information request blank, pgs. 2-3

### Do You Have a New Product?

improved product, either plant or laboratory equipment . . . or a new improved material . . . of specific interest to the chemical process field? If you will submit detailed information including uses, specifications, performance, distinctive features, nature of accompanying photos, drawings or size of cut available, our Editors will consider it carefully for presentation to the 25,000 readers of this publication. There is no obligation. Write the Editors.

#### CHEMICAL PREVIEW

737 N. Michigan CHICAGO 11, ILL.



## 14 GAUGE TUBING

1 1/2" O.D. x 14 gauge tubing on a 6" center-to-center, type 347.

25 years of fabrication with all grades of alloys is available for special work.

Write for Bulletin CP 30

### ALLOY MANUFACTURING CO.

30th Street

Pittsburgh Pa.

When inquiring specify CP8714 — see information request blank, pgs. 2-3

## PUTS HEAT

*into steam units with the speed of a camera shutter*



### SUPER-SILVERTOP

• An Anderson Super-Silvertop Steam Trap, equipped with a snap-action Anderson Thermal Air Eliminator, puts heat into steam using units with the same click and speed as a camera shutter. Located on the side of the bucket the Eliminator is wide open when steam is first turned on, pressure forces the air out of the exhaust in an instant, then the Eliminator clicks shut, preventing steam loss. The unit immediately fills with hot, dry steam and heating starts instantly. Send for the book, "How to Choose a Steam Trap," describing Thermal Air Elimination.

### THE V. D. ANDERSON COMPANY

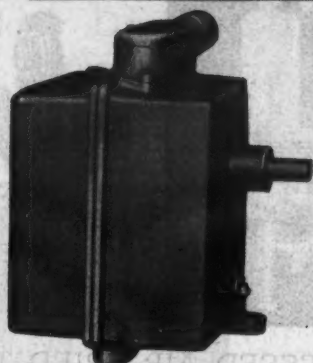
1934 WEST 96th STREET

CLEVELAND 2, OHIO

When inquiring specify CP8715 — see information request blank, pgs. 2-3



## BARBER-COLMAN



TYPE  
"AYCK"

### HEAVY-DUTY POWER UNIT

This sizeable (11" x 10 3/4" x 9 1/2" overall) power unit, which operates off line voltage, is ideal for applications requiring a heavy-duty high-torque (350 to 750 lb. in.) motor and gear reduction with built-in limit switches. Common uses include:

- Regulation of heavy dampers in combustion control systems.
- Operation of large butterfly valves, blast gates, and the like.
- Operation of large air and gas valves, multiple ratio fuel valves, and industrial fuel carburetors.

• Write for Bulletin F-1912 "Power Units".

BARBER-COLMAN COMPANY  
1201 ROCK ST. • ROCKFORD, ILL.

When inquiring specify CP8716 — see information request blank, pgs. 2-3



**Wham!**

TWELVE TIMES PER SECOND  
• 10 MILES PER HOUR

### TO MEET WAR PRODUCTION NEEDS

Jeffrey Miracle Hammer Crusher... a big primary reduction unit for a big job in war-production plants where critical materials such as carbide, chemicals, etc., must be reduced in a hurry to desired size. Large feed opening — massive construction — built for the tough jobs. Jeffrey crushers and pulverizers meet new demands for a sized product... a size and type machine for each reduction problem.



Established  
in 1877

The Jeffrey Manufacturing Company  
153-99 North Fourth Street, Columbus 16, Ohio

When inquiring specify CP8717 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944

## PRODUCTION

### Plastic Type Apron Resists Acids

*Offers serviceable substitute for rubber; made of Jean cloth which is molded through with plastic*

**Uses** — For wide range of services, including many where the protective and durable qualities of rubber are generally required.

**Features** — The aprons made of this plastic treated material are described as possessing great flexibility for maximum comfort and working ease.

**Description** — These new plastic aprons available in black are carefully designed and fabricated to resist oils, acids and other damaging agents to assure desired protection and impart long wearing qualities. Plastic is moulded clear through diagonally woven Jean cloth resulting in a strong material. Aprons are made in the following sizes: 27 x 36 ins., 30 x 36 ins., 36 x 40 ins. and 36 x 44 ins. Complete information concerning these products on request. Manufacturer states that delivery can be made promptly.

FARNHAM MFG. CO., 201 N. Wells St., Chicago 6, Ill.

When inquiring specify CP8718 — see information request blank, pgs. 2-3

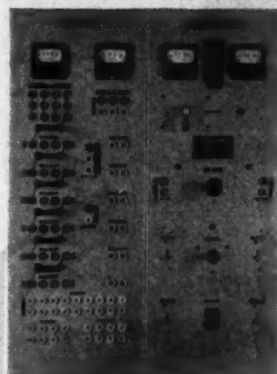
### Seven Adjustable Cutting Tools

Eight page folder gives descriptions of seven adjustable cutting tools, a counterbore and spotfacer, three blade adjustable hole cutter, two blade adjustable surface facer, adjustable gasket cutter and thread tool grinding fixture.

ROBERT H. CLARK CO., Dept. CP, 3424 Sunset Blvd., Los Angeles 26, Cal.

When inquiring specify CP8719 — see information request blank, pgs. 2-3

## TEST PANEL FOR BETTER CHEMICAL LABORATORY WORK



**YOUR** laboratory staff can achieve greater efficiency in their work if they are equipped with a "Standard Electric" Test panel, such as the metalurgical testing panel shown here—or one of the other types produced by this company. This time-saving equipment has convenient connections for all types of required currents and voltages.

**WRITE FOR COMPLETE INFORMATION  
AND PRICES—GIVING YOUR LABORATORY  
TESTING REQUIREMENTS AND PROBLEMS.**

Address CP-15

**THE STANDARD  
ELECTRIC TIME CO.**  
"Specialists in this Line"  
SPRINGFIELD, MASSACHUSETTS

When inquiring specify CP8720 — see information request blank, pgs. 2-3

## IMMEDIATE DELIVERY

### All-Neoprene Latex INDUSTRIAL GLOVES

Impermeable to practically  
All Acids and Caustics

Highly Resistant to Oils  
and Greases



LONG 14" GAUNTLET  
GAUGE .030 to .040  
SIZES 10 - 11 - 11 1/2 - 12  
INDIVIDUALLY BOXED  
SPECIFY No. 5737-2

Protect vital hands to keep your workers on the job. Request sample and quotations on these extra serviceable gloves available to you now.

**Seiberling LATEX PRODUCTS CO.**  
AKRON • OHIO

When inquiring specify CP8721 — see information request blank, pgs. 2-3

## A SWELL PLACE TO WORK

You can feel a justifiable sense of pride when the Joes, Louies, Hanks, and others in your plant speak of it as "a swell place to work."

On the other hand, the best employee-relationship in the world can go for naught if a faulty hygienic condition is permitted to exist. Take dust for instance—it may be the cause of low employee morale, poor workmanship, and sluggish production.

If you find that it is, we will be glad to assist in working out your problem. In the meantime write for our Dust Control Bulletin No. 112.

**AMERICAN  
FOUNDRY EQUIPMENT CO.**  
573 S. Bykit Street  
Milwaukee Indiana

**NO DUST  
HAZARD**



When inquiring specify CP8722 — see information request blank, pgs. 2-3

# PUMP AIDS of 1944

Essential data on the installation, operation and maintenance of modern pumping equipment. Prepared by Blackmer engineers for those who buy and use rotary pumps.

**These Bulletins will be sent FREE upon request**

## 304: FACTS ABOUT ROTARY PUMPS

Diagrams of operating principles of swinging vane type rotary pumps.

## 111: DIRECT-CONNECTED ROTARY PUMPS

Low capacity, high efficiency pumping units of wide industrial application.

## 115: SANITARY PUMPS

Important data for food processing plants.

## 120: MARINE PUMPS

The advantages of "bucket design" (swinging vane principle) in the Marine field.

## 205: ROTARY HAND PUMPS

Safety, efficiency and economy in handling stockroom liquids.

## 400: EASY-KLEEN STRAINERS

(made by Blackmer) The importance of protection for positive displacement pumps.

## SER-1: PUMP MAINTENANCE CARD

Handy check list, in card form, to hang near each pump.

## 302: PUMP ENGINEERING DATA

Rarely published tables, charts and other useful information for those who use pumps.

## 100: TRUCK PUMPS

Power-take-off and self-powered pumping units for tank trucks.

Your "pump file" is not complete without these bulletins. Sign and mail the coupon NOW.

Blackmer Pump Company, 1841 Century Avenue, Grand Rapids 9, Michigan

Please send bulletins checked.

No. 304 ☐ No. 115 ☐ No. 205 ☐ No. 302 ☐  
No. 111 ☐ No. 120 ☐ No. 400 ☐ No. 100 ☐  
No. SER-1 ☐

Signed \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

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## PRODUCTION

### Fluorescent Unit Has Low Brightness and High Intensity

Adaptable to surface, pendant or row mounting as desired — easily installed and maintained



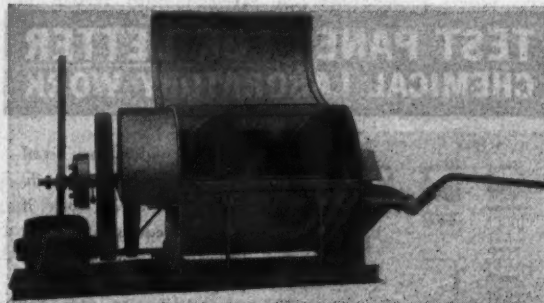
ALL PURPOSE UNIT

**Features** — Combines high intensity illumination with low surface brightness. Designed to permit high illumination values from 50 to 100 foot candles. Individual ceiling mountings, individual pendant mountings, continuous row mountings all made with one model. Quick installation, easy cleaning and maintenance.

**Description** — Chassis — constructed from single sheet of steel. Surface is high reflective, non-chipping white enamel throughout. Diffusing panels of double strength ceramic coated glass. Unit utilizes 40 watt T-12 48 in. fluorescent lamps. Dimensions: 48 3/8 ins. long, 19 3/4 ins. wide, 7 ins. high. Starters are replaceable without removing lamps. Wiring channel is accessible by removing two wing nuts. Any unit in continuous row easily completely disconnected at any time. Bulletin describing this Model 2032 on request.

MITCHELL MFG. CO., Dept. CP, 2525 Clybourn Ave., Chicago 14, Ill.

When inquiring specify CP8724 — see information request blank, pgs. 2-3



### 5 Reasons Why the Multi-Mixer Has more advantages

1. A better mix in less time
2. Multi special arranged paddles
3. All material in action
4. Well built and dust-proof
5. Fully equipped with SKF bearings

Built in sizes 3 to 60 cu. ft. Motor drive or geared head motor drive or tailor made to fill your requirements.

Write for full information.

**The Multiplex Concrete Machinery Co.**  
Elmore, Ohio

When inquiring specify CP8725 — see information request blank, pgs. 2-3

**Uses** — For wide application where a light weight, shielded 200 watt, 4 light commercial fixture is desired.



### COMPRESSED AIR DRIED TO BELOW ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments



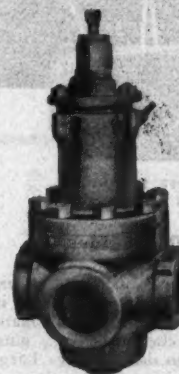
Kemp KSG Silica-Gel Adsorptive Dryers are the standard in modern industrial applications. For Bulletin T25C write The C. M. Kemp Mfg. Co., 405 East Oliver Street, Baltimore, Maryland.

### KEMP of BALTIMORE

When inquiring specify CP8726 — see information request blank, pgs. 2-3

For high temperature service

### NORDSTROM Lubricated PLUG VALVES



For high temperatures, Nordstrom Valves are ideally suited. These valves are used in handling temperatures as high as 1000 F. Also sub-zero temperatures. Special lubricants are provided for these extremes of temperature. Corrosion and erosion problems as well as the problems of high temperature are successfully overcome by use of Nordstrom Merchrome Coated Valves. This coating is a hard facing applied to the contacting surfaces of the plug and body by a patented welding process. It prevents galling. Such valves are in successful use in refineries handling hydrocarbons, in paint mills handling hot varnishes, in paper mills on digesters, etc. For all chemical services, Nordstroms keep upkeep down.

Bulletin upon request

**MERCO NORDSTROM VALVE COMPANY**

A Subsidiary of Pittsburgh Equitable Meter Company

Main Offices: 400 Lexington Ave., Pittsburgh, Penna.

When inquiring specify CP8727 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP8723 — see information request blank, pgs. 2-3



## PRODUCTION

### Indoor Dry-Type Transformers Feature Streamlined Cases

*New enclosures give units appearance of air conditioners and increase protection*



TRANSFORMER terminal case is easily removed

**Uses** — For primary circuits 601-15,000 v. Designed especially for indoor installations in industrial plants.

**Features** — Provide greater safety and ease of installation and outward appearance is that of the newest room type air conditioning units, — sheet steel with flowing lines, rounded corners and two tone gray finish. Weight of

the new enclosing case is less than old screened enclosure. **Description** — All live parts are metal inclosed, various portions of the case being separately removable. The high voltage terminal compartment cover can be removed to facilitate connecting the transformer to supply circuit. Interior is easily accessible for cleaning and tap changing. Taps are brought to a convenient terminal board located just below the edge of the casing and close to a diagrammatic nameplate. The deeply pitched louvres provide an outlet for the cooling air. Air is taken in at the bottom of the case through a screened opening along the bottom of each side and is circulated through and around the coils by convection. Access to low voltage terminals is gained by removing the low voltage compartment cover. The solid plate on each side of the transformer can be taken off to clean or inspect the core or coils. A removable top section at each end of the case facilitates drilling and installation when overhead conduit connections are desired. Holes are provided so that rods may be inserted through interior supports for easy handling. If crane is not available, jack bosses on each of the four lower corners make it easy to move the unit. Solid sheet metal top and sides and deeply pitched louvres protect the unit from hazards which might result with open screen enclosures, such as sprinkler system operation or accidental contact of rods or wire being carried by workmen. Length of the transformers is about twice the width so that they may be installed in dead spaces between pillars of building or in out of the way places.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8728 — see information request blank, pgs. 2-3

### Do You Have a New Solution?

Has a recent use of your equipment solved a difficult chemical plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

CHEMICAL PREVIEW

737 N. Michigan

Chicago 11, Ill.



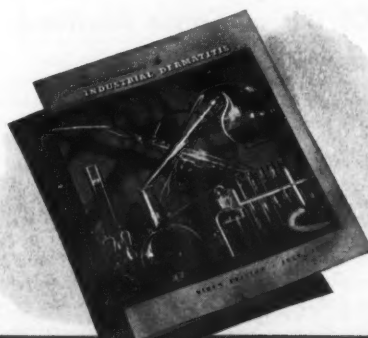
## Family Portrait

*... prized in any plant*

The 14 members of the PLY family—each member designed to combat a specific course of industrial skin disease—are known and esteemed by men and women who owe their skin health to pre-work applications

of these trustworthy preparations. Production men, too, prize PLY for the man-hours saved by keeping workers free from disabling occupational skin diseases.

Write for details of the specific PLY formula to prevent dermatitis in your plant.



### ninth edition—second printing THE ANSWER TO INDUSTRIAL DERMATITIS

*The unprecedented demand for this revised and enlarged manual of prevention and protection, quickly necessitated a second printing. Send for your free copy of this authoritative, illustrated booklet.*

### THE MILBURN COMPANY

3246 E. WOODBRIDGE, Detroit, Michigan

PIONEERS OF SKIN PROTECTION IN INDUSTRY

When inquiring specify CP8729 . . . see information request blank, pgs. 2-3

## NEVILLE Solvents



Experience has proved that coal-tar solvents are the most desirable for many difficult solvent problems. Neville has developed not only uniformly excellent solvents of standard distillation ranges, but also a number of new fractions. Neville offers a complete range of Coal-Tar Solvents to meet the widely varying requirements of industry.

The grades, specifications and uses of these versatile solvents are fully described in this 40-page booklet. Write for your copy today.

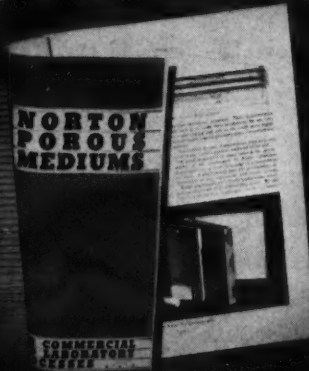
### THE NEVILLE COMPANY PITTSBURGH · PA.

Chemicals for the Nation's War Program

BRINOL · FOLKOL · STYOL · TOLLAC · HEVYOL · CRUDE COAL-TAR SOLVENTS  
HEAVY SOLVENTS · COCAINOL · DIBOL · QUINOLINOL · TOLUOL · TOLUOL  
BUBBLE COMPOUNDING MATERIALS · WIRE ENAMEL THINNERS · DIBUTYL PHTHALATE  
RECLAIMING, PLASTICIZING, NEUTRAL CRESOLITE, AND SHINGLE STAIN OILS

When inquiring specify CP8730 — see information request blank, pgs. 2-3

## Just off the Press This Helpful Booklet



Just off the press is a new edition of the helpful booklet, "Norton Porous Mediums", a free copy of which will be sent you upon request. It contains complete specifying data enabling you to pick the type of porous medium, the permeability, porosity, pore size, pressure loss, uniformity and strength best suited to your processes — together with performance data and installation instructions.

NORTON COMPANY — Worcester 6, Mass.

## NORTON POROUS MEDIUMS

When inquiring specify CP8731 — see information request blank, pgs. 2-3

## PRODUCTION

### Band Filing Machine For Use On Metals, Fibers, Plastic, Wood

Twelve different types and sizes of file bands from  
1/4 in. — 3/8 in. wide in ovals, half rounds  
and flats

**Uses** — Continuous band filing machine for file broaching operations on metals, alloys, plastics, fibers, wood. Finishing up materials previously sawed, nubbled, burned, stamped or cast.

**Features** — Comparatively unskilled workers can turn out jobs that compare favorably with hand experts in getting smooth finishes with tolerances of .001 in. Work pressure and filing speeds are under absolute control assuring a surface that is a machined finish. Operations done on costly millers and broachers are now being produced on these filing machines.

**Description** — Twelve different types and sizes of file bands for use on this band filer, ranging from 1/4 to 3/8 in. wide in ovals, half rounds, or flats. Internal filing work is performed by unsnapping file bands and threading through the work. All steel welded machine — large throat capacity of 15 1/2 inches and a thickness capacity of 6 inches. Bearings are Timken roller and Oilite bearings with a totally inclosed worm gear drive transmission. Equipped with "Speedmaster" infinitely variable speed pulleys to give any cutting speed from 50 to 250 FPM.

CONTINENTAL MACHINES INC., Dept. CP, 1301 Washington Ave., South, Minneapolis 4, Minn.

When inquiring specify CP8732 — see information request blank, pgs. 2-3



**PREVENT  
ACCIDENTS**  
with this

### ASBESTOS Oil and Grease Absorbent

Every time an American workman is injured as the result of slipping and falling on an oil or grease soaked floor, Hitler and Hirohito have real cause to celebrate. Yet these costly accidents need not happen. You can help prevent them with

**Carey  
ASBESTO-SORB**

This inexpensive, super-efficient compound absorbs oil and grease — provides a non-skid, non-slip floor surface that's safe. Write today for details and a sample of ASBESTO-SORB. Address Dept. 90.

THE PHILIP CAREY MANUFACTURING COMPANY • Lockland, Cincinnati, Ohio

When inquiring specify CP8733 — see information request blank, pgs. 2-3



### High-Speed SIFTERS

- GYRO-LAB
- GYRO-WHIP
- SUPER

CHEMICALS, POWDERS, GRAINS, ETC.  
POUNDS TO TONS CAPACITY PER HOUR.  
2 TO 250 MESH. MULTIPLE SEPARATIONS.  
SMOOTH — QUIET — MODERN — EFFICIENT.

### ALNICO PERMANENT MAGNETS

(SPOUT OR CHUTE TYPE)  
CLASS "A" RATING FROM  
FIRE UNDERWRITERS.

REMOVE TRAMP IRON — GUARD YOUR  
PRODUCTS — PROTECT VITAL MACHINES —  
PREVENT FIRE AND EXPLOSION.



Richmond Mfg. Co.

LOCKPORT, N. Y.



When inquiring specify CP8734 — see information request blank, pgs. 2-3



## Prelude to VICTORY

In shops all over the country, machines . . . not unlike this one at Sperry . . . are chanting out a *Prelude to Victory*, as they produce materials for a nation at war.

We at Sperry are proud to be a part of that chorus.

For over 46 years, Sperry craftsmen have been combining their experience and

skill with the best machinery and equipment available to produce Sperry Filter Presses. Today, these presses are efficiently employed in hundreds of industries engaged in the production of vital supplies and munitions for our Armed Forces.

If you have a filtration problem, consult Sperry. Analysis and recommendations are made without obligation.

**D. R. SPERRY & COMPANY, Batavia, Ill.**

Filtration Engineers for Over 46 Years

When inquiring specify CP8735 — see information request blank, pgs. 2-3



## PRODUCTION

### Air Flotation Stoning Units For Various Dry Commodities

*Separation made by specific gravity; material rendered "fluid" by air stream*

**Uses** — Removal of stones, glass non-magnetic as well as magnetic metals and other hard, dangerous contaminations from many products, particularly those destined for human consumption. In use in flour and cereal mills, peanut shelling plants and in various food processing operations.

**Features** — Separation is made by specific gravity — by difference between bulk density of stock and its contaminations. Material flows downhill across a rapidly oscillating deck, by gravity, rendered fluid, by diffused air stream from blower below. Stones sink, work up hill and out throat of separator at its higher end.

**Description** — Low blower requirement is due to the fact that this machine does not lift the entire mass of material simply to remove a small percentage of heavier contamination. Stones, glass and metal are removed free of cleaned stock. No shrinkage by loss of good material. Curved baffle on throat is automatically regulated by flow of material, change in quantity of contamination present does not effect the efficiency of the separation and such changes do not make necessary supervision or manual adjustments. Selection of several models, all compact in design, with built-in fans, outside controls. Structure is heavy electrically welded steel, oversize ball bearings throughout. Capacity up to 16 tons per hour. Power requirements are approximately 3/5 of one horsepower per ton hour capacity. Installation made without difficulty. Literature on request.

SUTTON, STEELE & STEELE, INC., Dept. CP, Dallas, Texas.

When inquiring specify CP8736 — see information request blank, pgs. 2-3

### 4 Lb. Carbon Dioxide Fire Extinguisher

*Compact unit has handy grip and thumb operated trigger valve for quick action; fixed discharge horn*

**Uses** — For wide range of applications with emphasis upon maximum portability and quick action so essential in extinguishing "spot" fires which are frequently encountered in power houses, machine shops, production lines and various vital areas in processing and production plants.

**Features** — This model, one of a series of 4 lb. CO<sub>2</sub> extinguishers features a thumb operated trigger valve which releases a penetrating blanket of Carbon Dioxide through a fixed discharge horn. A handy grip makes it easy to support and operate the extinguisher by pressure on trigger valve. No valves to turn, hoses to adjust. Clean and harmless.

**Description** — In olive drab and red finish. Permanently fixed fire resistant horn eliminates necessity for aiming adjustments. One hand free for precautionary measures. In using these extinguishers some plants bracket them near machinery and areas requiring such protection. In addition, extinguishers may be placed conveniently for quick transportation to cover periodic fire hazardous work. Literature and further details on request.

RANDOLPH LABORATORIES, INC., Dept. CP, 8 E. Kinzie St., Chicago, Ill.

When inquiring specify CP8737 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



## Dependability IN YOUR LABORATORY!

THE NEW LINDBERG LABORATORY FURNACES AND HOT PLATES are engineered for dependable performance and built for long life. In addition, they are designed to add to the high standard of present day laboratory cleanliness. Even the most fastidious technician will appreciate the modern streamlined appearance Lindberg equipment presents.

Pictured above is the Lindberg Combustion Tube Furnace. Let's glance over the many important features you can benefit by in your laboratory.

★ Because of the high temperatures obtainable, this furnace is ideal for fast modern volumetric methods of carbon or sulphur determination as well as gravimetric determination on carbon and all alloy steels, including stainless and heat resisting steels.

★ Three low voltage, high temperature Globar elements permit continuous operation with temperatures up to 2500°F. or for occasional operation to 2650°F. Heating elements are easily accessible — no inconvenient dismantling and assembling job required to replace them. Temperature is regulated by a built-in variable voltage transformer with coarse or fine adjustment for amperage control. Adjustment is made by merely making the necessary settings with the amperage control knobs.

★ An ammeter is provided to show the proper and safe current required for the Globar heating elements. The temperature in the combustion zone is indicated by a

pyrometer which is connected to a platinum thermocouple.

★ Conveniently located on furnace shell in addition to the transformer control knobs, ammeter and pyrometer are a pilot light which shows when furnace is in operation; an on and off switch; and adjusting knob for controlling oxygen flow through a needle valve and rubber tubing adapters connected to the needle valve.

★ Furnace is equipped with adapters for easy interchangeability of tubes. Three sizes of tubes, 1", 1 1/4", and 1 1/2" O.D. can be adapted, while fourth tube, 2" O.D., can be used without adapters.

★ For 60 cycle, AC current with voltage at either 110 or 220 volts. Furnaces for 25 cycle operation can also be supplied.

See your dealer today. He will be pleased to go over your requirements and point out the advantages you get with the new Lindberg Combustion Tube Furnaces, Box Furnaces, Crucible Furnaces and the new laboratory Hot Plates.

# LINDBERG

Well-known Throughout the World as the Leaders in Developing and Manufacturing Industrial Heat Treating Equipment



LINDBERG ENGINEERING COMPANY  
2430 WEST HUBBARD STREET, CHICAGO 12, ILLINOIS

SOLD EXCLUSIVELY THROUGH LABORATORY EQUIPMENT DEALERS

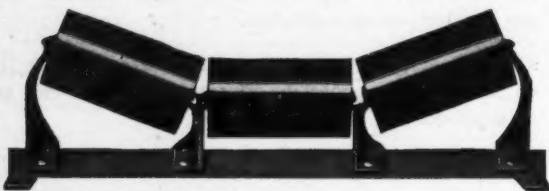
When inquiring specify CP8738 . . . see information request blank, pgs. 2-3

# How To OPERATE AT FULL CAPACITY



**T**O KEEP production lines moving—often 24 hours a day—that's industry's problem today. Delays for repairs are out.

Rex Belt Idlers help solve that problem. They assure trouble-free and uninterrupted service. Easy and inexpensive to install, they keep material flowing under the toughest conditions.



## Here's why:

1. Rollers are one-piece cylinders—removable and interchangeable.
2. Triple labyrinth grease seal—grease stays in and dust stays out.
3. Tapered roller bearings take all thrust—and radial loads.
4. Malleable brackets ribbed to prevent breakage under shock.
5. Large grease reservoir with passage to both bearings.
6. Unit mounting of roller bearings—positive, permanent alignment.

For further information on this and other conveyor units, write for Bulletin No. 410. Chain Belt Company, 1694 W. Bruce Street, Milwaukee, Wisconsin.



**REX** BELT CONVEYORS  
**CHAIN BELT COMPANY**  
**OF MILWAUKEE**

When Inquiring specify CP8739 — see information request blank, pgs. 2-3

## PRODUCTION

Kelvin Bridge Source Voltage is  
60 c. AC Instead of Usual DC

Entire equipment completely contained in a single cabinet; operates by single dial



KELVIN BRIDGE

by average workers — up to several hundred tests per hour with suitable test fixtures.

**Description** — Entire instrument is completely self-contained in a single cabinet, requiring no outside accessories such as batteries or galvanometers. Operation is reduced to utmost simplicity and directness since measurements are obtained by the rotation of a single dial directly calibrated in resistance, the dial readings being multiplied by a factor determined from the setting of the standard resistance switch. Instrument possess extreme ruggedness and delivers high speed operation. The instrument is characterized by a source voltage of only .05, which means no appreciable heating of any resistor under test. The overall accuracy is within plus or minus 2% except for resistance values below .0005 ohm. The accuracy at the lowest resistance that can be measured, .0001 ohm, is within plus or minus 5%. The standard resistor decade DR-20 supplied with this instrument has 10 settings of from .001 to 1.0. This Kelvin Bridge is the model K-1.

INDUSTRIAL INSTRUMENTS CO., Dept. CP, 156 Culver Ave., Jersey City, N. Y.

When Inquiring specify CP8740 — see information request blank, pgs. 2-3

## Maintenance Arc Welding

"Maintenance Arc Welding" — 233 page guide and illustrated reference book provides a group of maintenance studies, dealing with the application of welding in the fabrication of replacements. Available direct from the publisher (address below) at 50c per copy postpaid anywhere in U. S. (elsewhere 75c).

JAMES F. LINCOLN ARC WELDING FOUNDATION, Box 5728, Cleveland, Ohio.

When Inquiring specify CP8741 — see information request blank, pgs. 2-3

This Is  
Doing It  
**THE  
EASY  
WAY**

WELD IT . . . . OR THREAD IT



Use **SARAN**\* for Piping Corrosive Chemicals

• Because of its excellent resistance to acids and corrosive chemicals, Saran Pipe could be recommended for jobs formerly using hard rubber, stainless steel and special chemical pipe on that score alone. But in addition, this thermoplastic pipe is easily installed—either by simple hot plate welding or by threading with standard pipe dies and joining with standard Saran flanges and other fittings. Available in sizes from 1/2" to 2". Write us for engineering booklet on Saran Pipe.

Acadia Synthetic Products Division  
WESTERN FELT WORKS  
4035-4117 Ogden Ave., Chicago, Ill.  
Branch Offices in All Principal Cities

**ACADIA** Synthetic PRODUCTS  
Processors of  
Synthetic Rubber and Plastics  
Sheets • Extrusions • Molded Parts

When Inquiring specify CP8742 — see information request blank, pgs. 2-3

TUBING  
FITTINGS  
PIPE  
PIPE FITTINGS  
SHEETS  
RODS

Largest Independent  
Manufacturers and  
Cutters of Wool,  
Hair, and Jute Felts

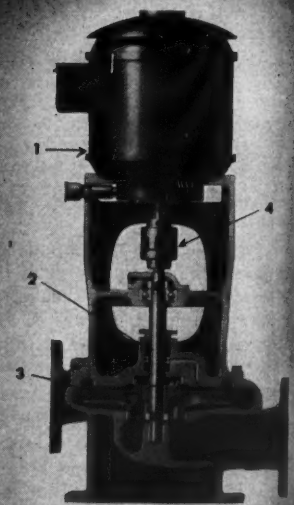
\*Licensee of The Dow  
Chemical Company

## ENGINEERED TO CUT COSTS

The high efficiency ratings of SCV Pumps is not an accident—it is the result of over 30 years' specialized experience, modern plant equipment and highly skilled craftsmen. Thus the lower maintenance and operating costs of Economy Pumps are a measurable gain, assured by precisely engineered features, such as:

- 1—High motor mounting—above floor splash and dirt.
- 2—Accessibility—complete rotor removable without breaking pipe connections.
- 3—Smooth operation—impeller spins between two bearings.
- 4—Flexible coupling—accessible stuffing box.
- 5—Standard motor—avoids prolonged shutdowns on any stock motor is usable.
- 6—Handles all clear liquids—10 to 500 GPM.

Write for New Pump Data Book Indispensable to Plant Executives and Engineers. Sent Free. Simply write for copy on your letterhead.



**ECONOMY PUMPS, Inc.**  
HAMILTON, OHIO

When Inquiring specify CP8743 — see information request blank, pgs. 2-3



## PRODUCTION

### Caster Embodies Two Ball Raceway

*Metal or resenoid wheels for use on portable tanks, floor trucks and dollies*

**Uses** — On portable, tanks, trucks, dollies and floor trucks.

**Features** — Design embodies two complete large diameter, ball raceways. Strength of materials lead or rake — basis of easy swiveling.

**Performance** — Test models under laboratory and actual operating conditions indicate that a very satisfactory performance can be anticipated under loads ranging from 400 to 800 pounds per caster in average industrial plants over wood, concrete and end-wood-block floors.

**Description** — Furnished with either metal or ABK resenoid floor protective wheels. Roller bearings are standard in most models. Oilite or porous iron bearings are available for metal wheels. Wheel sizes range from 3 inches to 6 inches diameter. Pressure lubrication fittings are provided in both swivel and wheel. Catalog describing complete line of casters is available upon request.

RAPIDS STANDARD CO., Dept. CP, 535 Bond Ave., NW Grand Rapids, Mich.

When inquiring specify CP8744 — see information request blank, pgs. 2-3

### Blower Type Heat Diffusers

Blower type heat diffusers are described in four specification sheets. These blowers are designed to heat and ventilate large areas uniformly and economically. There are numerous illustrations of the many types of air distribution outlets available. Heat diffuser ratings at standard speed are given, also btu constants, based on two pounds steam, 60 degree entering air temperature. Schematic drawings of the several types and tabulated specifications are also provided. The relative high velocity of these units makes it easy to achieve wide uniform heat coverage. Quiet operation is a feature. Selective air distribution is assured with two and three fan units and with either plain and louvered outlets. Units are suitable for heating, ventilating and drying. Where high temperatures are required, as for drying, more than one heating coil may be installed in a unit.

CARRIER CORP., Dept. CP, Syracuse, N. Y.

When inquiring specify CP8745 — see information request blank, pgs. 2-3

### Lockers & Shelving

Lockers, cabinets, wardrobes, shelving are all illustrated and described in two-color-four-page folder. Shoprobe unit is especially designed to meet today's requirements. Hat, coat, rubbers, lunch, small items may be stored in 98 sq. in. of floor area. Each person also has a private locked compartment. There is complete circulation around outer garments hung on the rack and the compartments above have perforations in doors and back. A complete selection of shelving is also described and illustrated. Another section in this folder shows modern, compact wardrobe units for individual sectional or tier installation. These are designed for easy, quick installation. No special skill is required and job can be performed by average workers. Bulletin 1722 on request.

LYON METAL PRODUCTS, INC., Dept. CP, Aurora, Ill.

When inquiring specify CP8746 — see information request blank, pgs. 2-3



**FREEZE that FIRE!**

**with the Randolph "4"**

**CARBON DIOXIDE FIRE EXTINGUISHER**  
Model FF4-V



**The Right Extinguisher** — For flammable liquids — motors — electric fires — the Randolph "4" carbon dioxide unit is the fast and safe extinguisher — instantly discharges a penetrating, icy blanket of gas that freezes and smothers the fire completely, preventing its spread and damage to material.



**In The Right Place** — Convenient, portable, light, the Randolph "4" is quickly available. Detaches easily from its wall bracket. Guards periodic work that is fire hazardous. The Randolph "4" provides positive protection — it gets to the fire before the fire gets a start.



**Quick to Operate** — No valves to turn, hoses to adjust, horns to swing up, the Randolph "4" is panic proof — aimed and operated with one hand — the rigid horn permits accurate aim and control — a touch of the thumb — and the fire is out!

**Leaves No Trace** — Randolph "4" carbon dioxide gas is clean and harmless — not a trace of deposit, stain or contamination remains to injure machines, affect electric motors, damage material or destroy chemical formulae. **Convenient to Get** — Prompt delivery to all essential industries. Your supply house probably has the Randolph "4." If not — write, telephone or wire —

# RANDOLPH LABORATORIES, INC.

8 EAST KINZIE STREET

CHICAGO 11, ILLINOIS, U. S. A.

When inquiring specify CP8747 . . . see information request blank, pgs. 2-3

# Cramer



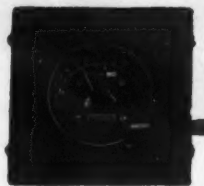
## TIME DELAY RELAYS

**For Accurate Dependable Time Control**

These resetting type Timers are being used more and more to save money and improve production.

We also have specially developed Time Delay relays suited for tube protection in electronic applications.

Write for full particulars.  
Bulletins 700 - 800 and 900.



TD1C

**The R.W. CRAMER COMPANY Inc.**  
CENTERBROOK CONNECTICUT

When Inquiring specify CP8748 — see information request blank, pgs. 2-3

## DAVIS FLOAT BOXES MAKE LIQUID LEVEL CONTROL POSITIVE AND DEPENDABLE



Davis Float Boxes are used where the liquid level in a closed tank is the governing factor in control of valves, switches, motors and other devices. They can be supplied with all types of electrical switches, and air pilots as well as for mechanical connection to valves or other equipment. Combinations of Davis Float Boxes and Davis Control Valves are available to meet any needs. Other Davis fluid control equipment includes internal float units for direct, or pilot operation.

The Float Box illustrated above is No. 164 with mercury tube switch. ASK FOR BULLETIN 101-A.

## DAVIS REGULATOR COMPANY

2562 S. Washtenaw Avenue

Chicago, Illinois

When Inquiring specify CP8749 — see information request blank, pgs. 2-3

## PRODUCTION

### Conduit Systems for Steam, Oil or Hot Water Lines

*For piping process liquids comparatively long distances; pipes insulated from exterior but not from each other*

**Uses** — Systems made up of this piping are well adapted to piping process liquids long distances. Such systems handle oil, water, steam, hot process liquids.

**Features** — The design of this systems permits handling liquids with lowest possible heat loss. As units are prefabricated considerable time is saved in installation. Steam or hot water may be used to heat liquids in other lines.

**Description** — Combination of pipes can be furnished as required with insulation so arranged that pipes are insulated from the exterior but not from each other. The conduit is helical corrugated, coated and wrapped with asphalt saturated asbestos felt. Assembled units come in 21 ft. length for speedy installation. Prefabricated connecting bands and all accessories necessary for a complete system are included. The system is adaptable to underground or overhead installations and equally efficient for hot or refrigerated liquids of all kinds. A tile system, built on the same system, is also available with diatomaceous earth lining. A descriptive bulletin features numerous illustrations showing various stages of actual installations and emphasizing the manner in which the system meets the specific requirements of various industrial processes.

THE RIC-WIL CO., Dept. CP, Union Commerce Bldg., Cleveland, Ohio.

When Inquiring specify CP8750 — see information request blank, pgs. 2-3



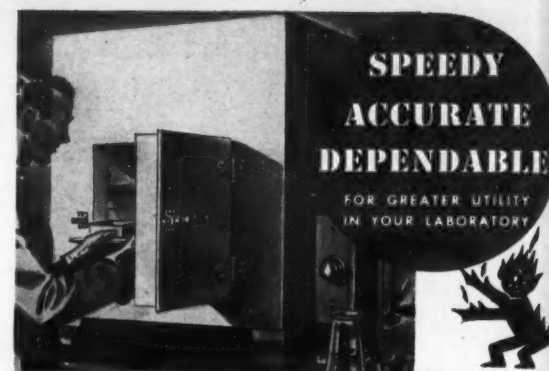
In Roots-Connorsville Centrifugal Blowers, special care in both design and workmanship is given to producing well balanced units, with high efficiency through experienced designing of volutes, impellers, bearings, seals, etc. Single-stage "R-C" units handle pressures up to 3 lbs. Multi-stage units up to 30 lbs. Capacities from 100 to 50,000 CFM. For all applications where air or gases are to be moved under moderate suction or pressure. Write for bulletin.

**ROOTS - CONNORSVILLE BLOWER CORP.**

401 Richland Avenue  
CONNORSVILLE, INDIANA



When Inquiring specify CP8751 — see information request blank, pgs. 2-3



## FOR POSITIVE RESULTS USE A DESPATCH LABORATORY OVEN



Built to new standards of efficiency, this forced-draft oven gives superior accuracy, speed and flexibility—for wider usefulness in your laboratory. . . . For all operations needing controlled, uniform, heated airflow. Very fast; automatic. To 260° C. Control sensitivity  $\pm 1^\circ$  C.

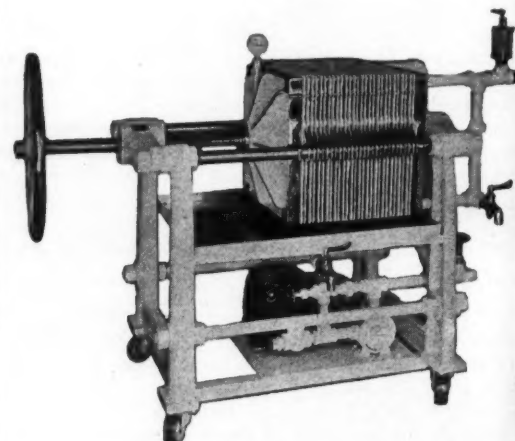
ASK FOR BULLETIN 105-CP TODAY!

**DESPATCH**  
OVEN COMPANY MINNEAPOLIS

SEE YOUR LOCAL DEALER OR WRITE DIRECT

When Inquiring specify CP8752 — see information request blank, pgs. 2-3

## ERTEL ASBESTOS DISK FILTERS



These "ULTRA FILTERS" are available in a variety of types and sizes to meet the exacting requirements of the drug, chemical, food processing and other war industries.

Ertel filters of special design may be obtained for the reclamation of cutting oils, hydraulic fluids, etc.

## ERTEL ENGINEERING CORP.

Manufacturers of Liquid Handling Equipment  
KINGSTON, NEW YORK

New York Sales Office & Showroom . . . 40 W. 48th St.

When Inquiring specify CP8753 — see information request blank, pgs. 2-3



## PRODUCTION

### Positive Displacement Chemical Proportioning Pumps

*Manual or automatic — high and low pressures, solution handled is isolated from all operating parts*

**Uses** — For wide variety of chemical processing applications, blending reagents, feed of wetting reagents, pH control, water conditioning, corrosion control, maintaining acid and alkali baths. Handle mineral acids, organic acids, alkalis, metal salts, calcium chlorite, sodium hypochlorite, (all concentrations), aldehydes, ketones, hydrocarbons, etc.

**Features** — Isolation of chemical solution handled from all operating parts. Valve custom built for service; balanced diaphragm assures accuracy and non-rupture; elimination of packing and piston gland trouble. Sealed lubrication is provided for all operating parts with the exception of the motor; in a dust tight case.

**Description** — In low pressure, high pressure and flow proportional models — (Descriptive literature giving specifications is available upon request.) Low pressure units are serviceable for pressures up to 400 gallons per hour against pressures as high as 200 pounds per square inch. Accuracy of this line of units is better than 1/8 of 1%. Increases in pressure cause no variation in volume feed. High pressure units are for working pressures up to several thousand pounds per square inch. They have the same basic features but their stroke control is not adjustable while the units are in operation. Flow proportional models are designed to be controlled directly from meters of a type which contain an element revolving or reciprocating in direct proportion to the flow through the meter. They can be driven by electric motors or air or water pressure.

WILSON CHEMICAL FEEDERS, INC., Dept. CP, Buffalo, N. Y.

When inquiring specify CP8754 — see information request blank, pgs. 2-3

#### Pressure Reducing Regulators

Pressure reducing regulators for refilling cylinders from manifold systems are described in an eight-page bulletin. An interesting feature of this publication is an actual size view showing section detail of the regulator. This together with the concise but detailed text emphasize the many features of this control and handling unit. These regulators have gas loaded instead of spring loaded diaphragms. They are made for inlet and delivery pressures. This design is said to achieve the advantage of relatively high delivery pressures which are much higher than can be handled adequately when diaphragms are spring loaded. These regulators are designed for services by laboratories using high pressure gases. They are widely used for purpose of re-filling to 400 and 800 pounds respectively per sq. in. respectively smaller cylinders from cylinder manifold systems.

VICTOR EQUIPMENT CO., Dept. CP, 844 Folsom St., San Francisco, Cal.

When inquiring specify CP8755 — see information request blank, pgs. 2-3

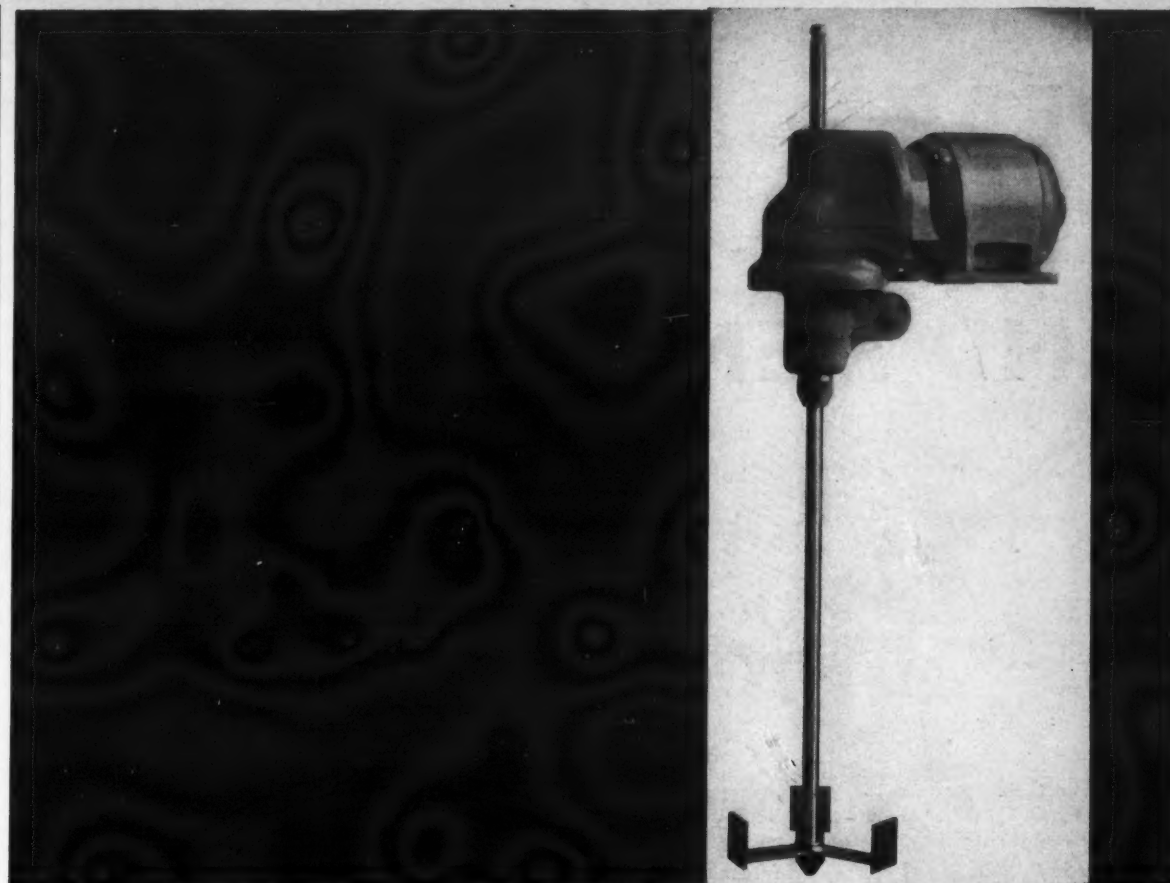
#### Heat Shock Resistant Stoneware

Low porosity chemical stoneware that will withstand sharp thermal shocks is described in four page bulletin. Various drastic test such as cooling with dry ice and then subject to hot steam are illustrated. Available in pipes, fittings, tanks etc.

U. S. STONEWARE CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8756 — see information request blank, pgs. 2-3

JANUARY - FEBRUARY, 1944



## STRUTHERS WELLS *Radial Type* PROPELLER AGITATORS



**STRUTHERS WELLS CORPORATION**  
PROCESS DIVISION  
WARREN, PENNSYLVANIA

The agitator is made from three simple parts—hub, supporting arms, and agitating blades. The pitch of the blade determines the type of agitation. The degree of agitation can be increased from mild circulation to extreme destructive action with rapid velocity of movement, effective mechanical shearing, and maximum turbulence. Further, the normal RPM at which this agitator operates eliminates the need of expensive gear reduction. Utter simplicity of design saves enormous quantities of critical materials; an important consideration when expensive alloys are required.

**PERFORMANCE COUNTS**, especially in new products—that is why you will find so many STRUTHERS WELLS Agitators in service in the manufacture of synthetic rubber and other chemical processes that are destined to play such an important part in post-war operations. Let STRUTHERS WELLS Engineers cooperate with you.

When inquiring specify CP8757 . . . see information request blank, pgs. 2-3

# GEARS... GUNS... AND MEN!



Today's victories of our armed forces are the result of their superior fire power on land and sea . . . and in the air — a superiority attained by design engineers working in conjunction with the army and navy ordnance departments. Victory and success depend on gun calibre and range . . . also its maneuverability and the clock-like precision of the firing mechanisms. . . . D.O. James precision-made gears are important controlling factors in attaining the maximum fire power and efficiency of many of the guns now being so successfully used by our armed forces. . . . Accurately conforming to these design requirements has been an every-day "must" in our organization for over 55 years in the design, engineering and manufacture of all types of gears and gear speed reducers.

## D.O. James

ESTABLISHED 1888

**D.O. JAMES MANUFACTURING CO.**  
1140 W. Monroe St., Chicago, U.S.A.

When inquiring specify CP8758 — see information request blank, pgs. 2-3

## PRODUCTION

### Colloid Mill Self-Contained Unit with Micrometer Gap Regulation

*In wide range of models for use in various processing applications; only one moving part*

**Uses** — In the production of emulsions, creams, intravenous injection materials, reduction of glands for serums, premastication of vegetation for infant feeding, paper coatings, leather finishes and the reduction of all color particles, in plastics, inks, etc.

**Features** — One moving part, temperature control of the product. Self-cleaning. Silent operation. No incorporation of air in product. Grinds hard particles. Micrometer adjustment, efficient water cooling, continuous operation. Selection of stainless steel, bronze and iron contact metals. Efficient cooling arrangement permits material to be processed and discharged cool.

**Description** — The simplicity of design — there is only one moving part — minimizes the number of parts to be replaced. The mill is a self-contained unit with one adjustment. This is a micrometer arrangement regulating the gap between the rotor and the stator and may be adjusted at any time whether the mill is idle or in operation and does not necessitate removal of any part of the machine. All springs and valves have been eliminated. The mill subjects the material to three distinct actions. First, the top turbine swirls it violently and the high velocity impact breaks up the liquid into minute globules. Second, the material is mechanically sheared by the teeth in the rotor and stator and third it is hydraulically sheared by the final smooth surfaces of the rotor and stator. The particle size is controlled by the size of the gap which is regulated by a micrometer adjustment device. The principle is the same for mills of all sizes. Therefore all work conducted on a laboratory size unit can be translated into terms of production units. Made in a range of sizes  $\frac{1}{2}$  to five gallons per hour up to 40-350 gallons per hour. Complete information on this equipment as it applies to specific requirements is available upon request. Catalog Number 401 features illustration, specifications and a large drawing showing detail of the design and construction.

EPENBACH, INC., Dept. CP, 44 11th St., Long Island City, N. Y.

When inquiring specify CP8759 — see information request blank, pgs. 2-3

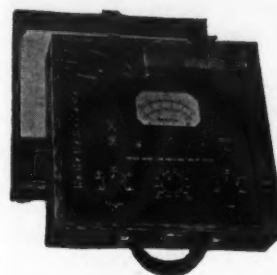
### Wire Rope Conservation

A series of wire rope conservation bulletins are now offered in pamphlet form for users of wire rope. The purpose of this series of illustrated articles is to help conserve wire rope and help the country to conserve steel. The demand for wire rope has been much greater than the combined efforts of all wire rope manufacturers could produce. Bulletin Number 1 deals with corrosion, causes and effects and remedies — proper lubrication. Bulletin 2 is on how sheave materials affect rope, 3 on sheave maintenance; 4 on the safety factor in wire rope; 5 lubricating methods; 6, rope reeving; 7, importance of regular inspection and others cover a wide variety of topics of practical interest. This pamphlet containing the complete series is available on request.

MACWHITE CO., Dept. CP, Kenosha, Wis.

When inquiring specify CP8760 — see information request blank, pgs. 2-3

## INDUSTRY KEEPS FIT ELECTRICALLY WITH WESTONS

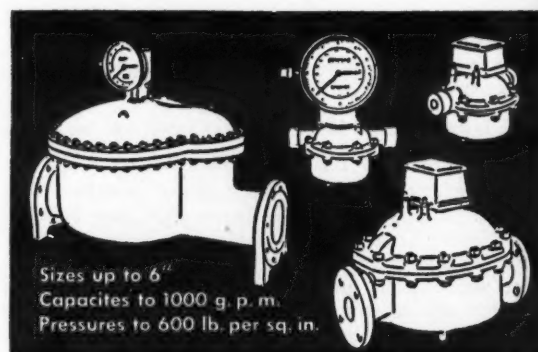


Industry's production figures bear testimony to the outstanding contribution plant maintenance men are making to war plant efficiency. Despite obstacles such as materials' scarcities and limited manpower, electrical equipment — old and new — is being kept constantly fit for full-scale output.

As part of the efficient maintenance combat team, WESTON test instruments play an important role. For in addition to their trustworthy indications, they also provide features which greatly simplify preventative maintenance procedure. In less time — at far lower cost — electrical equipment is being kept fit with dependable WESTONS. Weston Electrical Instrument Corporation, 669 Frelinghuysen Avenue, Newark, New Jersey.

## WESTON Instruments

When inquiring specify CP8761 — see information request blank, pgs. 2-3



Sizes up to 6"  
Capacities to 1000 g. p. m.  
Pressures to 600 lb. per sq. in.

## MEASURE by METER

when blending or processing liquids in your plant

Meter measurement provides exact control over the quantities going into each batch, thus securing precise uniformity in the finished product. Meters save time, the meter method being much quicker than stick gauging, weighing or waiting for batch tanks to fill. The meter system eliminates spilling, evaporation losses, fire hazards and open tanks subject to contamination. Meters reduce production costs. Meters save money. Write for Bulletin N-620.

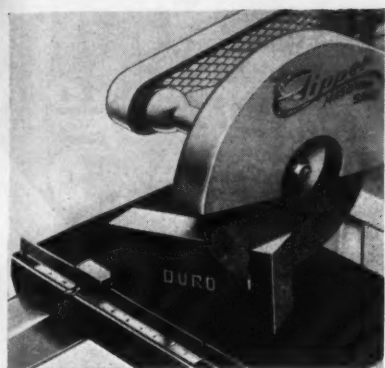
**PITTSBURGH EQUITABLE METER CO.**  
NATIONAL METER DIVISION  
400 N. Lexington Ave. Pittsburgh, Pa.

## Empire METERS

When inquiring specify CP8762 — see information request blank, pgs. 2-3



## PRODUCTION



SAW . . cuts "tailor made" masonry shapes.

### Portable Saws Speed-up Cutting Masonry Material

Used on refractories, tile, conduits, brick

**Uses** — For cutting silica brick, high alumina, chrome, magnesite, Dando, Mullite, B & W 80 or 80 Jr., Kromag, magnesium brick, dry press clay, repress clay, acid resistant brick. For wide application in steel mills, coke, gas plants; in boiler setting and in cement, lime and chemical manufacture; in glass manufacturing, in smelting and refining plants.

**Features** — Makes available tailor made shapes, reduces down time, fast, smooth cuts, greater flexibility. Multi-cutting principle utilizes a series of shallow cuts that automatically discharges cuttings and is said to eliminate frictional heat. Blade runs cool at extremely high speed.

**Description** — Series of models (all portable) covers wide range of specific requirements. Large selection of blades for every cutting job. Twenty-four different textures. Every blade has blotters conveniently attached to sides. Steel centers — protective steel ring within every blade safeguards machine shaft. Literature on request.

CLIPPER MFG. CO., Dept. CP, 4034 Manchester Ave., St. Louis 10, Mo.

When inquiring specify CP8763  
— see information request blank, pgs. 2-3

### Steam Plant Equipment

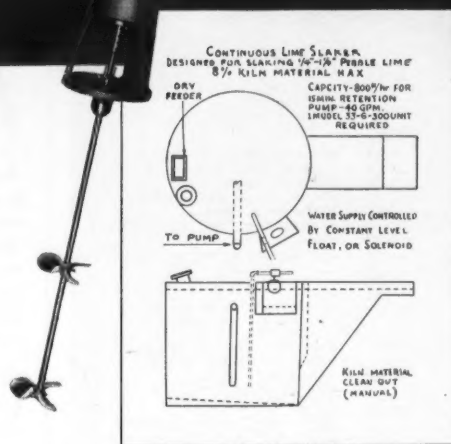
Twelve-page-illustrated bulletin is devoted to detailed photos, drawings and engineering data regarding steam plant equipment. The material covers blow-off valves — seatless, hard seat, double tightening; tandem combinations. Also water columns, gauges, expansion joints, fine screen strainers, remote liquid level indicators.

YARNALL-WARING CO., Dept. CP, Chestnut Hill, Philadelphia 18, Pa.

When inquiring specify CP8764  
— see information request blank, pgs. 2-3

For more information on product at right, specify CP 8765  
... see information request blank between pages 2-3.

## Process Adapted



An application which includes the suspension of filter aid, Fuller's earth, activated carbon, and crystals, while dissolving. Also efficient in the slaking of lime, preparation and storage of milk of lime, and all slurries.

### Here's an Example

To provide a continuous flow of milk of lime at 20% concentration, the usual procedure would be to supply a lime slaker, move product to a preparation tank, and then to storage—all by batch process.

Today this can be combined into a single vessel equipped with a dry feeder, interconnected with a pump and liquid level control and—if desired—to hydro feeder stops, the water valve continues to operate, however,

drogen ion control. When the demand is supplied, the mixer is shut off and the pump ceases to operate. The mixer continues to operate, however, to maintain material in proper suspension.

Compare the low cost of this process with ordinary methods. The horsepower of the mixer is selected to give the desired suspension of kiln material—(1) to collect all of it in the tank, or (2) to permit the larger particles to collect in the tank, or (3) to pass all kiln material out of the tank. Pebble lime can be used with this process.

The tank must be large enough to provide residence time slightly greater than the slaking period. The retention or the passing on of kiln material shows how solids can be graded by the action of a properly selected agitator.

In suspending solids to produce a chemical or physical change, proper agitation insures the dispersion and minute separation of each individual particle, and presents each particle's entire surface area to the liquid phase. For this reason when using Fuller's earth for bleaching or activated carbon for decolorizing, a vessel with good agitation uses less activated material and less time to achieve results. Important savings are being made in decoloring syrups, glycerine, animal and vegetable fats and oils.

Agitation which is exactly adapted to a given operation by process engineers will save material and time—insure a better product at lower cost—than the methods you are now using. "LIGHTNIN" Mixers are available for your present tanks.

### The Basis of our Recommendations

Twenty-three years of experience has resulted in an organization, research facilities and skill which qualify Mixing Equipment Company as an authority in the field of agitation.

Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as included in the table below. There is a process adapted agitator for every size and shape of tank and every operation;

Blending Miscible Liquids	Mixing Immiscible Liquids	Crystal Size Control	Gas Absorption & Dispersion	Suspension of Solids	Heat Transfer
Simple Mixing of soluble liquids as in reducing concentration	Washing of Liquids Extraction Contacting Caustic Treating Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of filter aid, activated carbon, Fullers Earth, Crystals while dissolving.	Suits Evaporators Reactor Vessels Heating Cooling

### What Size and Type do you need?

There is one size and model of mixer which will best answer the requirements of each individual mixing job. "LIGHTNIN" and MIXCO Mixers and Agitators are available in sizes ranging from 1/40th H.P. laboratory models to 50 H.P. agitators. Each size and model has a wide range of applications, but each also has definite limitations.

Perhaps you need a turbine type instead of propeller. If so, Mixing Equipment Company has available a variety of turbines to meet every agitation requirement.

## LIGHTNIN AND MIXCO AGITATORS



There is a process adapted agitator for every size and shape of tank and every operation; for batch or continuous operation. Because Mixing Equipment Co. products include all types of fluid agitators, you can obtain from them an impartial recommendation for the most economical solution of any problem involving fluid agitation. Mixing Equipment Co. engineers will gladly assist you in solving your particular agitation problem.

### MIXING EQUIPMENT CO., INC.

1084 GARSON AVENUE, ROCHESTER 9, N. Y.

MIXING EQUIPMENT CO., INC.  
1084 Garson Avenue, Rochester 9, N. Y.  
Please send me the literature checked:

- ☐ B-76—Side Entering Mixers
- ☐ B-78—Top Entering Mixers
- ☐ B-75—Portable Mixers
- ☐ B-69—Air Driven Mixers
- ☐ B-77—Laboratory Mixers
- ☐ MI-11—Operating Data Sheet

Name \_\_\_\_\_  
Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_



## Quick Facts

about  
**TURBINE DAYTON DOWD**  
PUMPS

**HIGH PRESSURES IN SINGLE STAGE** — Regenerative principle of this pump enables its single, multivaned impeller, operating at normal speeds, to develop very high pressure in single stage.

**LOW NPSH REQUIREMENT** — Lower pressure drop (suction loss) is an outstanding turbine pump characteristic. This characteristic assures satisfactory operation under minimum head conditions.

**ONE LOW-PRESSURE STUFFING BOX** — Subjected to suction pressure *only* — never to discharge pressure. Minimizes chance for leakage. Ideal for volatile liquids.

**SELF-PRIMING . . . HANDLES VAPOR WITH LIQUID** — Pump keeps its prime after initial start. Gradual increase in pressure from inlet to discharge minimizes possibility of vapor-locking.

**CRITICAL METALS MINIMIZED** — Only a small casing, two sideplates and the impeller comprise the pump-end. Saves on critical metals. Lowers cost of corrosion-resisting construction.

**ONLY 1 ROTATING PART . . . NO FRICTIONAL CONTACT** — Single impeller rotates freely without wear from metal-to-metal contact.

**PERFECT HYDRAULIC BALANCE** — Liquid is delivered equally to both sides of impeller through twin inlet openings. Eliminates thrust on ball bearings.

**LOWER COST STAND-BY PROTECTION** — Wearing surfaces are all incorporated in side-plates and impeller. Extra set affords stand-by protection at nominal cost.

**Free TURBINE PUMP DATA BOOK**  
144 pages of illustrations, performance curves, selection tables, installation and operating information on turbine pumps. Write on your business letterhead for your **FREE** copy today!

**DAYTON-DOWD**  
COMPANY  
QUINCY, ILLINOIS

Offices in Principal Cities

**TURBINE AND CENTRIFUGAL PUMPS**

When inquiring specify CP8766 — see information request blank, pgs. 2-3

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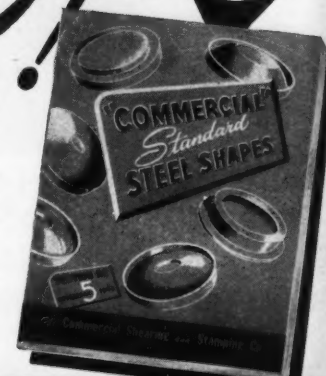
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## COMMERCIAL SHAPE BOOK

Now Ready for you **NO 5**

Buyers of stampings or tank heads will find Shape Book No. 5 invaluable, it lists parts for which tools are available at our plant.

If you did not get a copy. Write us.

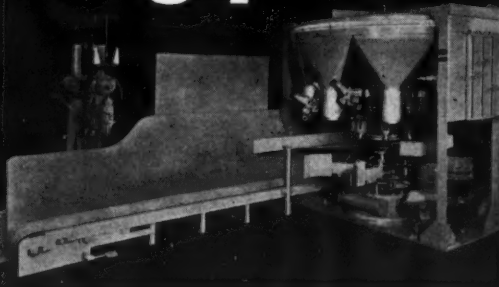


**THE COMMERCIAL SHEARING AND STAMPING COMPANY**  
YOUNGSTOWN, OHIO, U.S.A.

When inquiring specify CP8767 — see information request blank, pgs. 2-3

Increase your  
Bagging Production  
AS MUCH AS **50%**

WITH THE **CONSOLIDATED**  
Model **84 Super-Bagger**



WRITE FOR INFORMATION

**CONSOLIDATED**  
PACKAGING MACHINERY CORP.  
1400 WEST AVENUE, BUFFALO, N. Y.

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CHEMICAL PREVIEW



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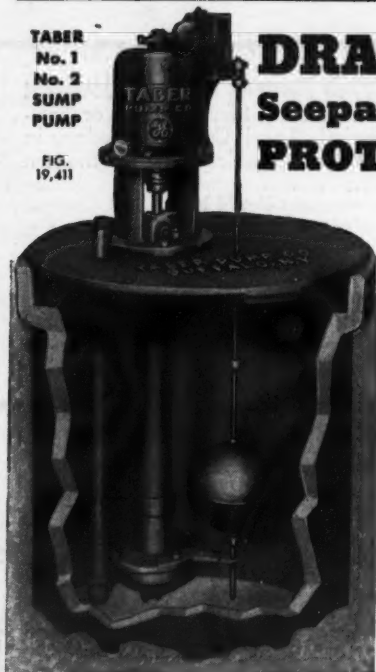
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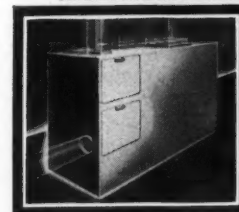
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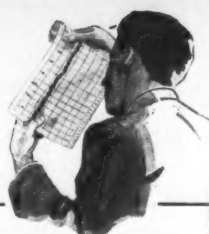
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JANUARY - FEBRUARY, 1944

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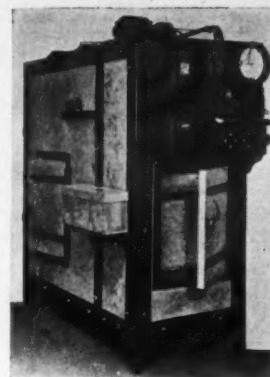
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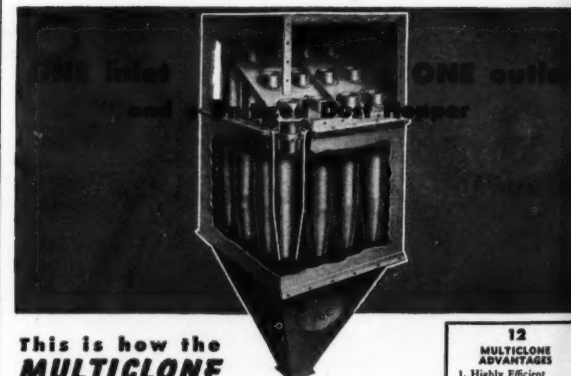
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### Post-War Tin Plating

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### Nuts — \$60,000,000

The nut crop of America is said to reach a value of sixty-six million dollars annually. The peanut, alone counting all its by-products and countless applications has a total value of nearly 200 million dollars per year. The popular cashew nut is a relative of poison ivy and even parts of its plant are poisonous.

### Soap — Always on the Job

Many of the problems of loading shells are very similar to those encountered in making soap. One of our largest soap makers now operates shell loading plants for the government under the direction of some of its key management and factory personnel states the interesting booklet, "Soap, Tool of Peace, Weapon of War."

### Sweet Or Sour

A sour lemon contains only ten percent of sugar but a sweet watermelon less than seven percent points out Chemical Digest, (house publication of F. D. Snell, Inc.).

### Absence Makes the War Grow Longer

From 800,000 to 1,500,000 workers are absent from their jobs on any working day because of sickness or injury according to a study just released by the Bureau of Research & Statistics of the Social Security Board.

### Cosmetic Boom

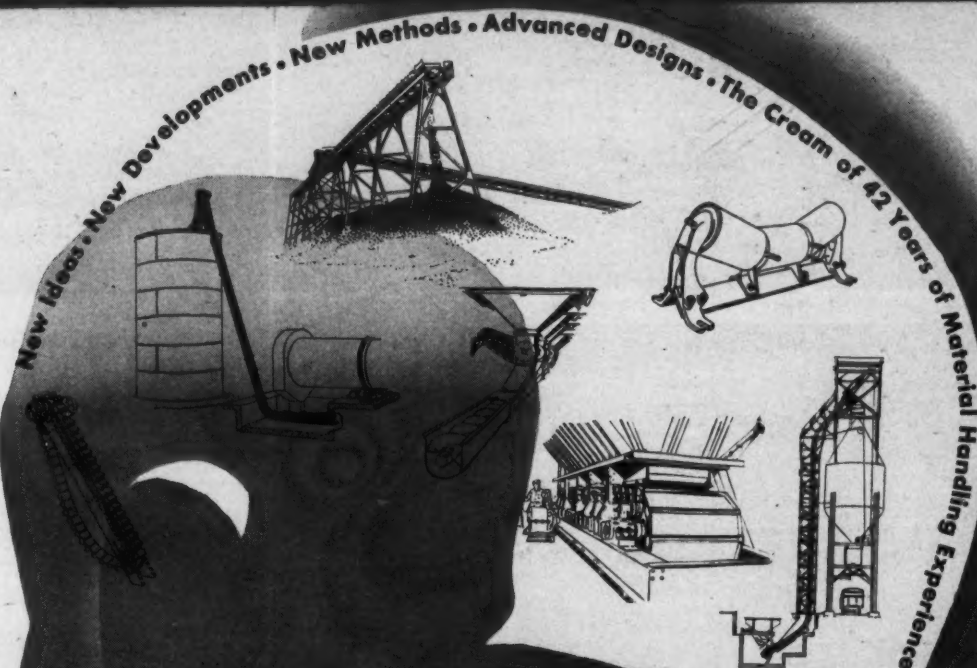
The cosmetic business is booming despite materials shortage. Some 2000 firms prepare, package and distribute beauty aids. The average woman defense worker spends nearly two dollars and a half per month on cosmetics.

### Acres of Salt

West Virginia has a two thousand four hundred square mile salt bed in its Panhandle. One acre of this land is said to be capable of yielding many thousands of pounds of salt.

For more information on product at right, specify CP 8364  
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JANUARY-FEBRUARY, 1944



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